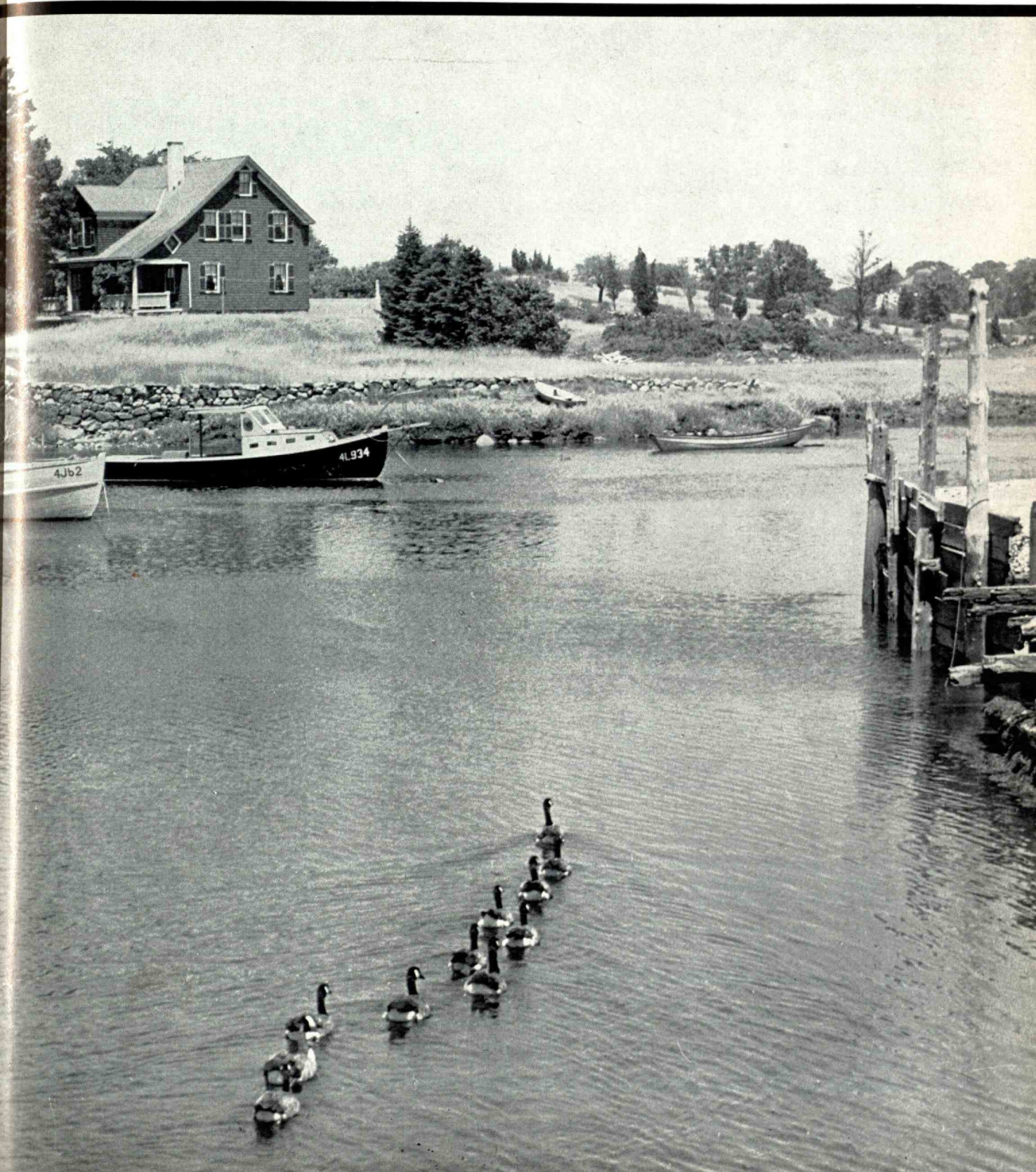


TECHNOLOGY

REVIEW

June 1958



technology review

Published by MIT

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Right off the Wire

A computer-controller system is said to be capable of landing 120 jet planes per hour. Human control can average no better than 40 per hour.

Dockside facilities at SIMPLEX' Submarine Cable Division in Newington, N. H. are extensive enough to continuously load two of the largest submarine cable ships simultaneously.

A new plant is reported to cut the manufacturing time of industrial carbon components from eight weeks to eight minutes.

A "building block" technique, using miniature plug-in units, makes it possible to build an electronic computer small enough to go on an office desk.

An iron-aluminum alloy has been made, the behavior of which indicates that there is a relationship between rusting and magnetism.

Some fruit trees have been found to ripen earlier after long exposure to gamma radiation.

At least one of the new "exotic" rocket fuels is being made in solid form and others are expected soon.

A patent has been issued for a radioactive "go-devil" (a device for cleaning pipe lines). If it sticks in a pipe it can be located with a Geiger counter.

It is estimated that malicious damage to street lamps costs New York City a quarter of a million dollars a year. A new plexiglas globe makes this sort of vandalism almost impossible.

Instead of the usual bracing and shoring, inflatable cushions are being used to wedge freight tightly in box cars.

One of the new guided missiles is launched from an automatic base which computes the location of the attacking object, calculates its speed and the proper point for meeting it. It also loads and fires the missile automatically.

A micro-porous synthetic material holds a liquid, such as an ink or lubricant, and gives it off at a controlled rate.

Damage to small delicate parts on a conveyor can be avoided by a new belt that uses permanent magnets to hold the pieces apart.

Glass-reinforced plastics can be strengthened by the use of a special new glass containing copper oxide.

Further information on these news items and on Simplex cable is available from any Simplex office. Please be specific in your requests.

A new wool-like synthetic fiber is water-repellent, quick-drying and less expensive than other synthetics.

A device for measuring the power output of a turbine involves an inner and an outer gear in constant mesh with free space between the teeth. This space is filled with oil on which the pressure can be measured.

Simplex Wire & Cable Co. was the first to adapt interlocked armor (CONDEX) for use with underground cable in 1924.

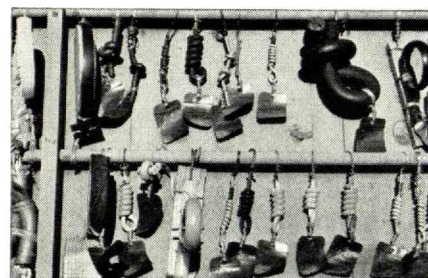
A logging company is using plastic nails to fasten logs together. They neither rust nor damage saw blades.

Paralyzed fingers can be made to move by means of tiny artificial muscles powered by a carbon dioxide cartridge.

Research conducted by two Simplex scientists in the early 1920's resulted in the first truly moisture-resistant rubber insulation. The isolation and removal of the proteins that are always present in natural rubber was the basis of the now famous ANHYDREX family of insulations.

Foamed aluminum is being made for use as a core in sandwich construction.

An electronic device checks the accuracy of aircraft guns without firing them.



Rooftop Laboratory

These cable samples, twisted and bent to exert maximum stress on insulations and jackets, are undergoing sun-crack endurance tests atop the Simplex plant at Cambridge. Many of these samples have been exposed to the elements for as long as fifteen years . . . and they haven't cracked yet. This is one example of the many punishing tests which Simplex insulating and jacketing compounds, such as Anhydrex, Thermoplex and polyethylene, are subjected to before they win final approval.

It's all part of a comprehensive system of quality control which has helped make Simplex the leader in cable research and manufacture.

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Linear Accelerometer
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Shown actual size.

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DESCRIPTIVE DATA

- **RANGE:** Up to ± 60 G full scale.
- **DAMPING RATIO:** 0.6 ± 0.2
(from -65°F. to $+175^{\circ}\text{F.}$).
- **LINEARITY:** 1 % of full scale.
- **PICKOFF:** Can be provided with
2 potentiometer pickoffs
(center taps optional).
- **SIZE:** $1\frac{7}{16}$ " dia., $3\frac{1}{4}$ " long.
- **WEIGHT:** 1 lb.

HONEYWELL LINEAR ACCELEROMETERS of the Type LA-500 Series are true linear, non-pendulous type instruments, inherently insensitive to cross-coupling accelerations. These instruments are available in a variation of ranges from ± 1 G to ± 60 G and can be provided with two potentiometer pickoffs. Essentially constant damping is maintained automatically throughout the entire operating range of -65°F. to $+175^{\circ}\text{F.}$ No warm-up time is required.

The combination of constant damping, high performance, small size and ruggedness makes HONEYWELL LINEAR ACCELEROMETERS of the Type 500 Series ideally suited for aircraft and missile applications where the most severe environmental conditions are encountered. Write for Bulletin LA-500, Minneapolis-Honeywell, Boston Division, Dept. 1, 40 Life Street, Boston 35, Mass.

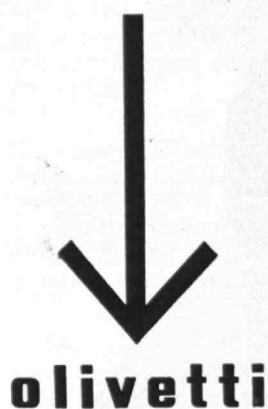
Honeywell



Military Products Group

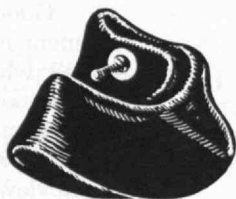
Olivetti office machines are made and assembled in eleven factories in six countries on three continents. Founded 50 years ago, Olivetti today employs 22,000 people, makes almost every major type of office machine, has sold 3,000,000 typewriters and 700,000 calculators.

In the United States, through dealers in principal cities, Olivetti offers printing calculators, adding machines, accounting machines and typewriters that provide many time-saving features. Write Olivetti Corporation of America, 375 Park Avenue, New York 22, N. Y.

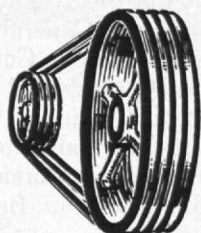


The Olivetti Divisumma 24, a high-speed single-keyboard printing calculator with automatic constant and memory, combines many individual computations into a single continuing calculation, eliminating re-entries, saving time and work.





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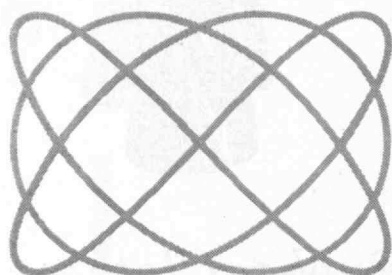
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Good Policy. — A note of optimism and encouragement is struck (page 405) by WALTER G. WHITMAN, '17, who believes that persons can — and will — work for the betterment of mankind when the proper environment is created. His message is being delivered at various gatherings throughout the country; The Review's article is based on an address given before the Boston Section of the Institute of Radio Engineers last March, but adapted for the printed page by Professor Whitman, who is head of the Department of Chemical Engineering. Except for a decade when he was associated with the direction of research for the Standard Oil Company (Indiana), Professor Whitman has been a member of the M.I.T. staff since his graduation in 1917. In recent years he has had unusual opportunity to play important roles in the administration of scientific endeavors on the national and international levels. He was director of the Basic Chemicals Division of the War Production Board, 1941–1945; member of the General Advisory Committee to the Atomic Energy Commission, 1950–1956; chairman of the Research and Development Board, Department of Defense, 1951–1953; secretary-general of the United Nations International Conference on the Peaceful Uses of Atomic Energy, 1955; and president of the American Institute of Chemical Engineers, 1956.

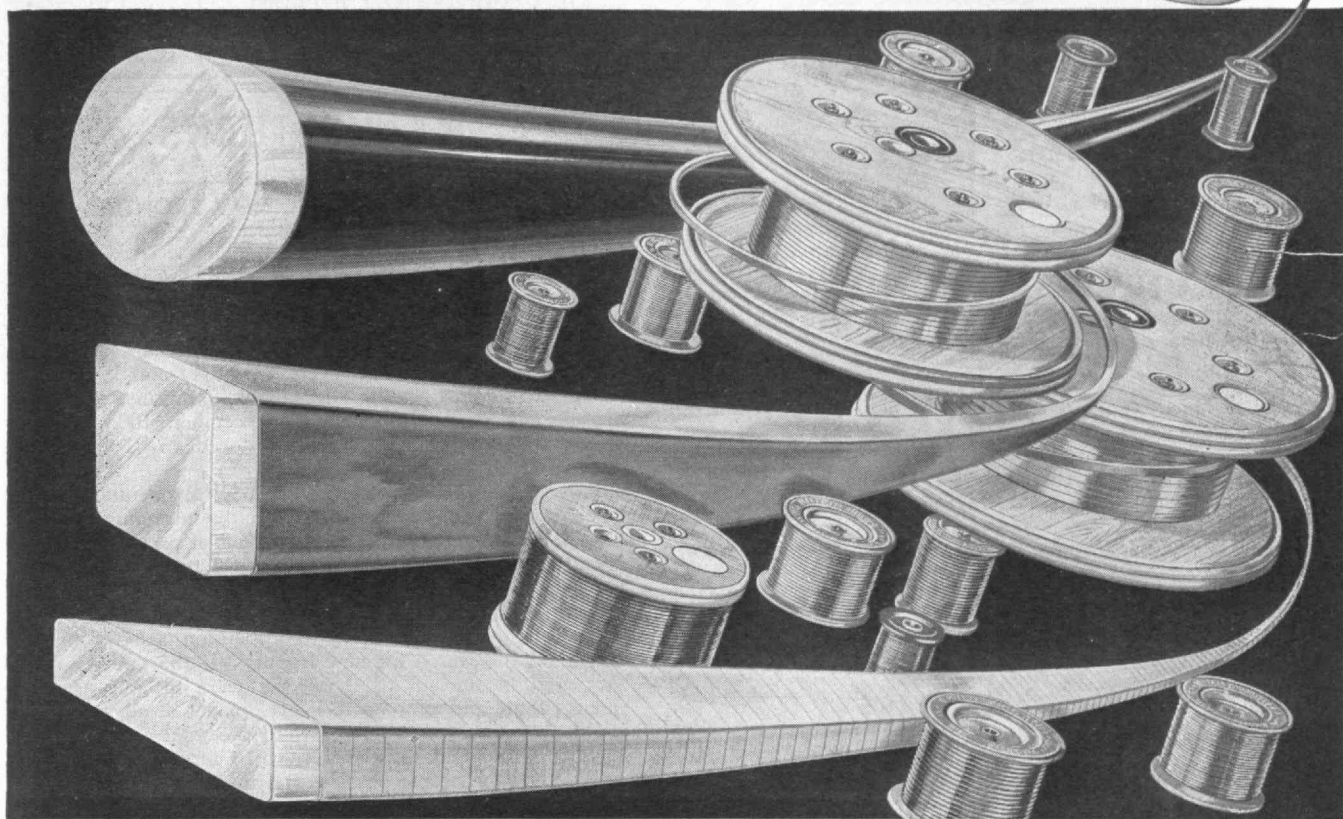
Good Potentiality. — In an examination of technology in a free society (page 408), JOHN B. RAE, Associate Professor of History at M.I.T., reminds us that if the incentive to produce is destroyed, the productive members of society are bled white to support the nonproductive ones, and economic and technological progress dies of suffocation. Professor Rae received the A.B., A.M., and Ph.D. degrees from Brown University in 1932, 1934, and 1936, respectively. He taught at Yale University, was a member of the Brookings Institution, 1936–1937, became assistant to the president of Brown University, 1937–1939, and since then has been at M.I.T. In 1956–1957 he was exchange professor of social studies at Case Institute of Technology. He is a member of the editorial board of *Business History Review* and *Explorations in Entrepreneurial History*, of the advisory board of the Lincoln Educational Foundation, and of the Executive Committee of the recently founded Society for the History of Technology.

Good Resource. — With his usual ability to tackle a complex topic and reduce it to its significant elements, interestingly written, FREDERIC W. NORDSIEK, '31, outlines (page 410) man's prodigal use — and waste — of water. An editorial associate of The Review since 1941, Mr. Nordsiek needs no introduction to Review readers. For those who feel the need of additional biographical data, we refer them to the January, 1958, Review, where Mr. Nordsiek's past is exposed on page 138.

(Concluded on page 390)

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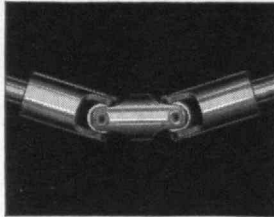
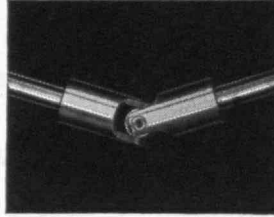
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DIEFENDORF
GEARS

THE TABULAR VIEW (Concluded from page 388)

Good Riddance. — Although it once was a scourge to be greatly feared, cholera has been eliminated from the United States primarily through sanitary engineering, according to JAMES A. TOBEY, '15 (page 413). Colonel Tobey, S.B., LL.B., M.S., Dr.P.H., is a frequent contributor to The Review — as well as to other journals. He is also a well-known lecturer on public health, to which field he has devoted his entire professional career.

MAIL RETURNS

OUTER SPACE — THE NEW FRONTIER

FROM WALTER B. KIRBY, '07:

The project of the International Geophysical Year is the greatest international collaborative effort which has been attempted for peaceful purposes. Sixty-seven participating nations are engaged in this activity, and there are more than 10,000 scientists and technicians working from 2,000 major stations scattered over the entire world! For such a comprehensive endeavor to terminate in December, 1958, however great its accomplishments, would not seem to be in the best interest of the world at large.

It is conceivable that the project now in operation should be continued, and expanded to explore the intriguing prospects of outer space. Rather than one year of international co-operation, the start of a "Century of International Co-operation," in the promotion of advance space projects, might well be considered.

One of the causes of war is the expansion of overpopulated areas and the search for new frontiers. If the nations, scientists, and technicians of the world were to give as much money, time, and effort to the development of advance space problems, as they now give toward the total annihilation of the world's populace, the idea of international bickering would tend to become obsolete and unthinkable.

The attempt to explore the planets of outer space will stimulate the imagination of all peoples, and might well provide the much-needed new frontier for expansion during the next century.

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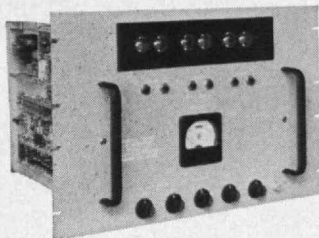
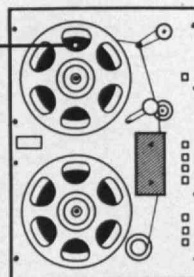
101 Park Avenue, New York

Alfred T. Glassett, '20, President

RAPID ACCESS

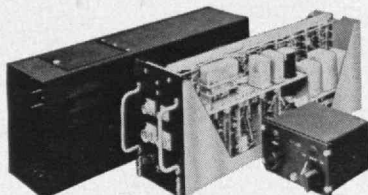
IN ANALOG DATA REDUCTION SYSTEMS

Three companion units by Hycon Eastern provide automatic indexing and high-speed access to selected data in multi-channel magnetic tape instrumentation systems.



For Tape Indexing

DIGITAL TIMING GENERATOR, MODEL 201, generates numerically coded timing signals which are recorded on magnetic tape throughout the data recording periods, providing a precise digital index in terms of elapsed time. The Generator also visually displays the exact time in hours, minutes and seconds as illuminated digits.

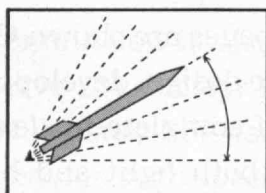
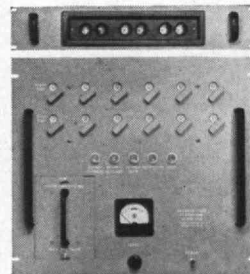


DIGITAL TIMING GENERATOR, MODEL 206A, FOR AIRBORNE APPLICATIONS is a militarized version of Model 201. A Remote Control Box contains Power off-Standby-Operate Switch, the Digital Clock Set, and the Time Display. Completely transistorized, Model 206A includes a binary coded decimal system al-

though other timing formats are available to meet customer requirements. Weighing only 15 pounds, Model 206A is stable to 1 part in 100,000 giving an accuracy of ± 1 second in 1 day's time.

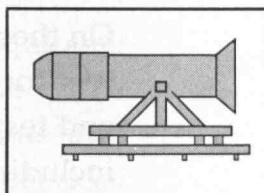
For Tape Search

MAGNETIC TAPE SEARCH UNIT, MODEL 202, operates during data reduction periods. On the basis of time indices recorded on the tape by the Digital Timing Generator, this instrument automatically locates and selects for controlled playback the tape data included between a "sequence start time" and a "sequence end time" specified by panel dial settings. The time index is visually displayed as illuminated digits on a small separate panel which may be remotely located for convenience. Model 202 may be modified to search for timing formats other than those originated by Model 201.



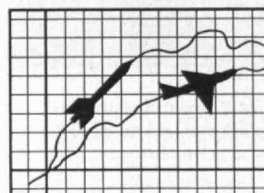
WIND TUNNEL TESTING

Pressure and temperature data of missiles are referenced to angle of attack. Model 201 records on tape a digitized position signal for each new angle of attack.



JET ENGINE TESTING

Digital Timing Generator, Model 201 synchronizes all data receiving equipment. Its output can be piped to multiple test cells and control rooms simultaneously.



MISSILE AND AIRCRAFT TESTING

Model 206A generates timing signals simultaneously with other flight test data. Model 201 generates a timing code format for synchronizing ground station recordings.

Write for Technical Bulletin TSG

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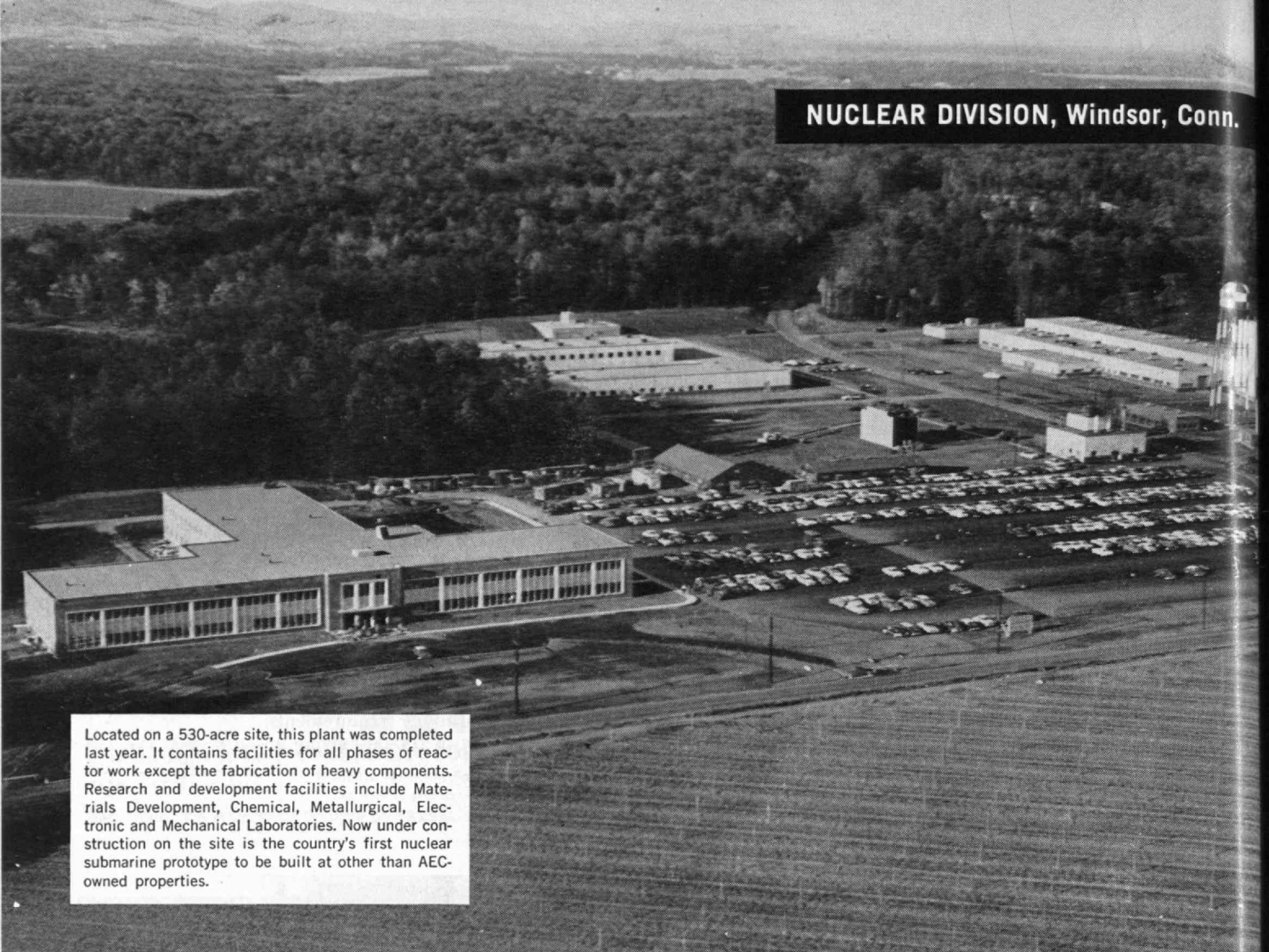


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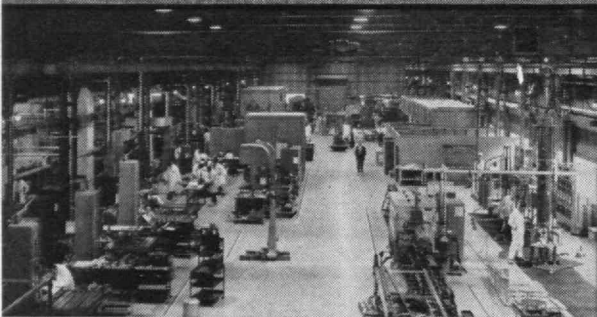
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Cambridge 42, Mass.

NUCLEAR DIVISION, Windsor, Conn.

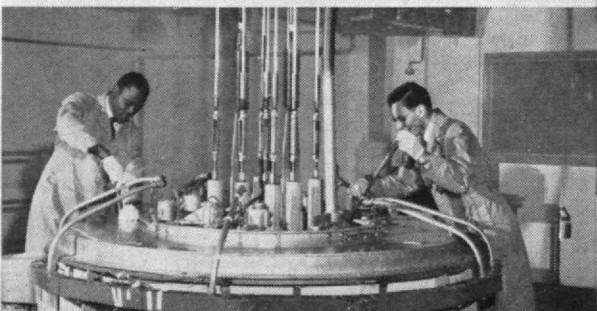


Located on a 530-acre site, this plant was completed last year. It contains facilities for all phases of reactor work except the fabrication of heavy components. Research and development facilities include Materials Development, Chemical, Metallurgical, Electronic and Mechanical Laboratories. Now under construction on the site is the country's first nuclear submarine prototype to be built at other than AEC-owned properties.



(ABOVE)—Partial view of Fuel Element Manufacturing Plant at Windsor. This plant includes an 80-foot high building where the intricate job of reactor core assembly is performed.

(BELOW)—Preparing a reactor for test in one of Windsor's two Critical Assembly buildings. Facilities for reactor testing include equipment for chemical analyses, spectrography, spectrometry, destructive and non-destructive tests.



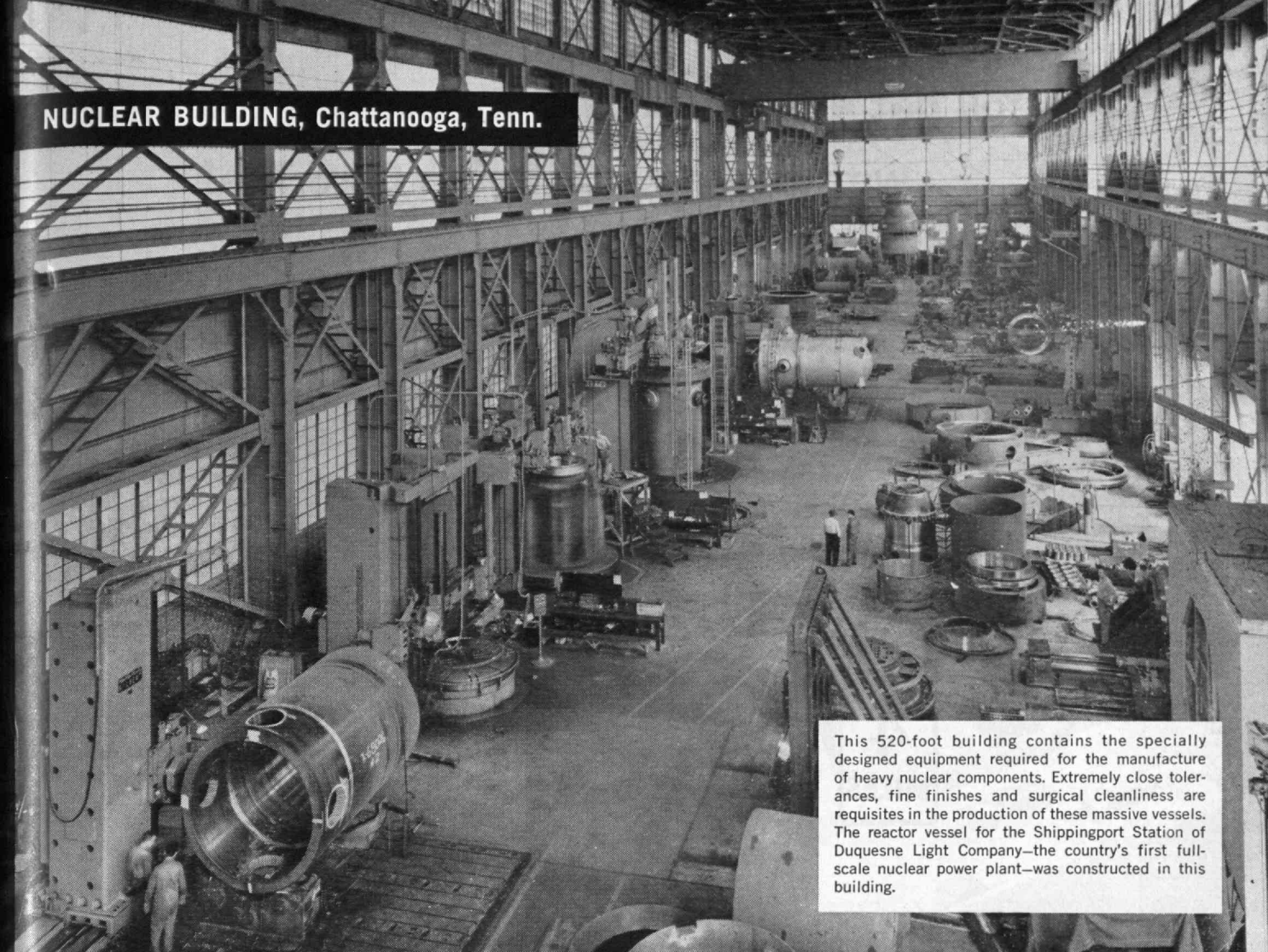
Ready **FOR**

On these pages are shown Combustion's facilities for the design, development, manufacture and test of complete nuclear reactor systems, including both light and heavy components. . . . These facilities, fully staffed by scientists and technicians, enable the Company to design and manufacture full-scale nuclear power installations for any requirements—civilian

COMBUSTION

Combustion Engineering Building

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NUCLEAR BUILDING, Chattanooga, Tenn.

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THE ATOMIC AGE

or military. . . . Combustion is also equipped and qualified to serve the nuclear field in the development of Materials, Mechanisms and Processes, and to provide such special services as Safety Consulting, Radiation Surveys, and Chemical and Biological Analyses. Information on these special services is available and will be sent on request.

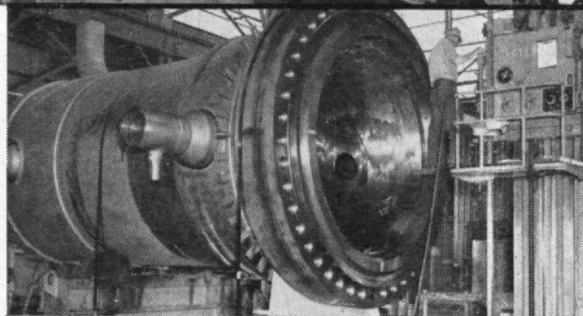
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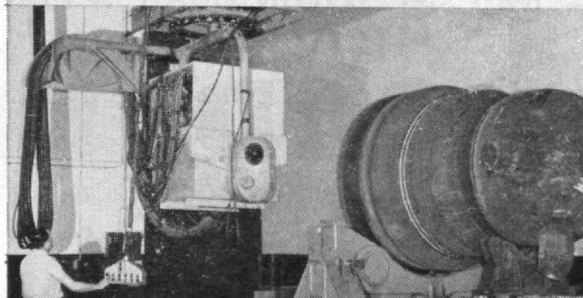


PAPER MILL EQUIPMENT; PULVERIZERS; FLASH DRYING SYSTEMS; PRESSURE VESSELS; SOIL PIPE



(ABOVE)—Reactor vessel being machined on large horizontal boring mill at Chattanooga. Other specially designed equipment for heavy component fabrication includes cladders, submerged arc and pressure welders, and optical alignment devices.

(BELOW)—15-million volt Betatron X-ray reactor vessel welds. Other Chattanooga testing facilities include equipment for ultrasonic and metallographic examination.





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THE TECHNOLOGY REVIEW

EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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Vol. 60, No. 8

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Front Cover

Photograph by Raymond E. Hanson

CHIMNEY ROCK

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Photograph by F. S. Lincoln

OUR ATOMIC POLICY

By Walter G. Whitman 405

Scientific conferences show that persons of all nations can work together for man's welfare, and will do so if proper environment for teamwork can be created

TECHNOLOGY IN A FREE SOCIETY

By John B. Rae 408

Effort and striving, combined with adequate incentive to produce for man's welfare, are required for technology to provide greatest benefits to a free society

PRECIOUS COMMONPLACE

By Frederic W. Nordsiek 410

A natural resource, necessary to all forms of plant and animal life, and useful when in the right place at the right time in sufficient purity, is being wasted by man

AMERICA'S MANY BATTLES WITH CHOLERA

By James A. Tobey 413

Sanitary engineering has removed the scourge of cholera in the United States, but in earlier times this disease was the cause of many serious epidemics

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Relating to the Massachusetts Institute of Technology

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The Balclutha, last of the full-rigged ships, as photographed at the San Francisco waterfront, where it serves as a tourist attraction.

*Photograph by
Ward Allan Howe*



F. S. Lincoln, '22

Chimney Rock

Vacationists, whose travels take them along routes 14 and 20 between Yellowstone Park and Cody, Wyo., will have opportunity to see this unusual display of nature, which is nearly 100 feet high.

The Technology Review

VOL. 60, NO. 8

JUNE, 1958

The Trend of Affairs

National Academy Elects Two

■ Two professors at the Institute have been elected to membership in the National Academy of Sciences, the highest honor in American science. The two elected are Thomas K. Sherwood, '24, Professor of Chemical Engineering, and Martin Deutsch, '37, Professor of Physics.

Dr. Sherwood, a resident of Concord, is widely known in educational and industrial circles as one of the country's leading chemical engineers. He has specialized in absorption and extraction, and in the mathematical applications in chemical engineering.

A native of Columbus, Ohio, Dr. Sherwood did his undergraduate work at McGill University (Montreal) and his graduate work at M.I.T., receiving the degrees of M.S. and Sc.D. in 1924 and 1929, respectively. After successive academic promotions in the Department of Chemical Engineering, he was appointed professor of chemical engineering in 1941. He served as dean of the Institute's School of Engineering from 1946 to 1952, when he was relieved of administrative duties of the Dean's Office to devote full time to teaching and research in chemical engineering. Dr. Sherwood holds the William H. Walker Award—top honor of the American Institute of Chemical Engineers—which was presented to him in 1941.

Professor Deutsch, who lives in Cambridge, is the man who first demonstrated experimentally the existence of positronium, a short-lived particle which exists for only one ten-millionth of a second. Chairman of the Directing Committee of M.I.T.'s Laboratory for Nuclear Science, he is currently pursuing a broad program of research on the radioactivity of elements and their decay products.

A native of Vienna, Dr. Deutsch received both the S.B. and Ph.D. degrees from M.I.T. in 1937 and 1946, respectively. He has been with the Department of Physics since 1939—as instructor in 1941, assistant professor in 1945, and associate professor in 1949. He was appointed professor of physics in 1953, and that same year was the recipient of a Guggenheim fellowship. Professor Deutsch has presented numerous papers at meetings of the American Physical Society, and is the author of a chapter in Volume 1 of the *Science and Engineering of Nuclear Power*.

Beavers' Ballot

■ Indicative of the close alliance nowadays between industry and education (when each is cognizant of their dependence on one another) is the roster of important industrialists in the nation who have been elected to govern the affairs of the M.I.T. Alumni Association for the fiscal year 1958–1959, beginning on July 1, 1958.

On April 25, approximately 3,300 Alumni cast ballots to elect officers of the Association, alumni term members on the Institute's Corporation, class representatives on the Alumni Council, and members of the National Nominating Committee.

John J. Wilson, '29, Director of the Minneapolis-Honeywell Regulator Company, has been elected to serve a one-year term as president of the Alumni Association. To fill the post of vice-president for a two-year period, the ballot designated William W. Garth, Jr., '36, who is president and treasurer of Photon, Inc. He is also president, treasurer, and director of the International Photon Corporation, and Graphic Arts Research Foundation, Inc.

The two new members of the Association's Executive Committee (each elected for a two-year term) are: F. Leroy Foster, '25, Director of the M.I.T. Division of Sponsored Research; and Philip H. Peters, '37, Vice-president of the John Hancock Mutual Life Insurance Company, Boston.

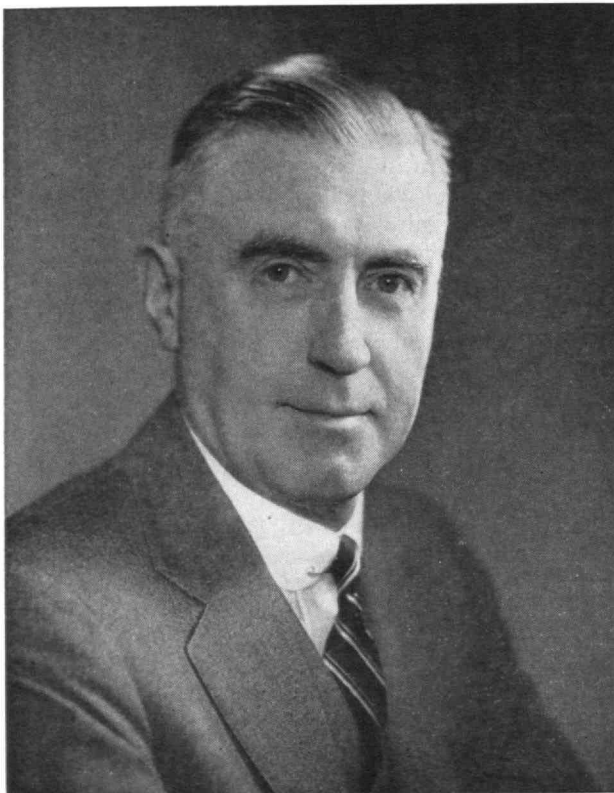
Elected to serve for five years as alumni term members on the Institute's Corporation are: Donald W. Douglas, '14, Chairman of the Board and President, Douglas Aircraft Company, Inc.; Gilbert M. Roddy, '31, President and Director, Boston Manufacturers Mutual Insurance Company, and President and Director, Mutual Boiler and Machinery Insurance Company; and Robert C. Gunness, '34, Executive Vice-president, Standard Oil Company (Indiana). Mr. Roddy has been serving as president of the Association for this fiscal year which began on July 1, 1957.

New members of the National Nominating Committee (each for a term of three years) to participate in the affairs of the Alumni Association beginning on July 1, 1958, are: John A. Lunn, '17, for District 1; Jean M. Raymond, '34, for District 2; Philip L. Alger, '15, for District 4; and Hartselle D. Kinsey, '24, for District 5.

Class Reunions in 1958

<i>Class</i>	<i>Date</i>	<i>Place</i>	<i>Reunion Chairman or Class Secretary</i>
1893	June 16	Luncheon—M.I.T. Campus	George B. Glidden, Centre Street, R.F.D., N. Dighton
1898	June 17	Buffet Luncheon, Algonquin Club, 217 Commonwealth Avenue, Boston	Edward S. Chapin, The Eliot, 370 Commonwealth Avenue, Boston 15
1900	June 17-19	The Pines, Cotuit	Elbert G. Allen, 11 Richfield Road, W. Newton 65
1903	June 14-15	Burton House, M.I.T., Cambridge	LeRoy B. Gould, 36 Oxford Road, Newton Center 59
1908	June 13-15	50th Reunion Snow Inn, Harwich Port	Leslie B. Ellis, 230 Melrose Street, Melrose 76
1913	June 13-15	Oyster Harbors Club, Osterville	William R. Mattson, 28 Brookdale Road, Newtonville 60
1916	June 13-15	Chatham Bars Inn, Chatham	Harold F. Dodge, 96 Briarcliff Road, Mountain Lakes, N.J.
1918	June 13-15	The Treadway Inn, No. Falmouth	John W. Kilduff, Estes Street, Amesbury
1923	June 13-15	The Pines, Cotuit	Wentworth T. Howland, 1771 Washington Street, Auburndale 66
1928	June 13-15	Marshall House, York Harbor, Maine	Walter J. Smith, 209 Waverly Street, Arlington 74
1933	June 14-16	25th Reunion Baker House, M.I.T., Cambridge	Charles C. Bell, 180 Wamponoag Road, E. Greenwich, R.I.
1938	June 14-15	Chatham Bars Inn, Chatham	John R. Cook, Wendling Farm, Williamstown
1943	June 13-15	Royal Club Hotel, Megansett Beach, Falmouth	Ralph E. Leader, 123 Country Way, Needham
1948	June 13-15	Curtis Hotel, Lenox	Robert H. Bliss, 55 Arbor Street, Wenham
1953	June 14-15	Wentworth-by-the-Sea, Portsmouth, N.H.	Marion C. Manderson, 100 Martin Street, S. Acton

President of Alumni for 1958-1959



John J. Wilson, '29 . . . *Fabian Bachrach*

is director of the Minneapolis-Honeywell Regulator Company. Mr. Wilson has acquired familiarity with the affairs of the Association by serving as vice-president from 1955-1957, Alumni Council member since 1950, and Class Agent since 1951.

Mr. Lunn is vice-president of Kendall Company in Boston. His Institute and Association affiliations have been numerous — as an officer of the New Haven County M.I.T. Club, a member of the Association's Executive Committee, vice-president and then president of the Alumni Association, alumni term member of the Corporation, member of the Committee on Nominations for Departmental Visiting Committees, member and chairman of the Alumni Fund Board. Mr. Raymond is president of the Raymond Manufacturing Company, Ltd. and of Raymond Engineering Products, Ltd. of Lachine, Quebec. He has been an honorary secretary since 1949; president and vice-president of the M.I.T. Club of Quebec; member of the Visiting Committee on the Department of Modern Languages.

Mr. Alger is consulting engineer with the Motor and Generator Division, General Electric Company, Schenectady. An active member of the M.I.T. Club of Schenectady, he was its secretary in 1922-1923. Mr. Kinsey is president of Union Carbide Olefins Company, division of Union Carbide Corporation, New York City. He served as vice-president of the M.I.T. Club of New York from 1952 to 1956.

The 14 classes whose numerals end in four and nine elected the following representatives to serve on the Alumni Council for a term of five years: George Owen, '94, Miles S. Sherrill, '99, Eugene H. Russell, Jr., '04, Arthur L. Shaw, '09, H. B. Richmond, '14, George W. McCreery, '19, G. Raymond Lehrer, '24, Eric A. Bianchi, '29, Henry A. Morss, Jr., '34, Frederick B. Grant, '39, Robert D. Peck, 2-44, Kenneth G. Scheid, 10-44, Archie H. Harris, 3d, '49, and Robert E. Anslow, '54.

Waldo V. Lyon: 1881-1958

■ Waldo V. Lyon, '05, distinguished teacher and researcher in the field of electrical engineering died on April 24, 1958. He was professor of electrical machinery, emeritus, at the Institute. Professor Lyon had been an active member of the M.I.T. staff for 47 years, from his graduation in 1905 until his retirement in 1952.

Professor Lyon was widely known for his studies of alternating current machinery, properties of conductors, and other electrical problems involving mathematical analysis, and was the author of such books as *Problems in Electrical Engineering*, *Problems in Alternating Current Machinery*, and *Applications of a Method of Symmetrical Components*. He was a fellow of the American Institute of Electrical Engineers, and had written numerous technical articles on subjects on which he was recognized as an authority.

After serving as assistant and instructor in Electrical Engineering, Professor Lyon was promoted to assistant professor in 1916, associate professor of electrical machinery in 1922, and professor of electrical machinery in 1929. He was a lecturer at the Institute from 1947 to 1952.

Individuals Noteworthy

■ Prominent in the spring news were the 27 promotions, elections, or appointments as set forth below:

Earl R. Mellen, '16, as Chairman, Daystrom-Weston Company . . . *Latimer F. Hickernell*, '22, nominated as President, American Institute of Electrical Engineers . . .

William L. Hyland, '22, *Edward C. Keane*, '22, and *Robert W. Moir*, '26, respectively, as President, Vice-president, and Secretary, Boston Society of Civil Engineers . . .

Paul J. Cardinal, '24, as Vice-president, National Vitamin Foundation, Inc. . . . *Boynton J. Fletcher*, '24, as Vice-president, Aluminum Company of America . . . *Julien J. Edgerly*, '25, as Vice-president, Vanguard Associates, Inc. . . .

Joseph W. Palmer, '29, as Vice-president and General Manager, Stanley Home Products, Inc. . . . *Donald B. Gilman*, '32, as President, Warren Steam Pump Company . . . *Major-General John H. Hinrichs*, '32, as Chief of Army Ordnance . . .

Richard M. Stewart, '32, as President, American Brass Company . . . *Charles B. McCoy*, '32, and *W. Allen Taft, Jr.*, '35, respectively, as General Manager, Elastomer Chemicals Department, and as Director of Sales, Petroleum Chemicals Division, E. I. du Pont de Nemours and Company . . .

Richard S. Morse, '33, as chairman of the Army Scientific Advisory Panel, composed of 57 scientists, engineers, educators, and industrialists . . .

Outerbridge Horsey, '33, as Minister, United States Embassy, Tokyo . . . *H. Neal Karr*, '34, as Vice-president, the Singer Manufacturing Company . . . *Wilfred D. J. MacDonnell*, '34, as President, Great Lakes Steel Corporation . . .

Frederick A. Prah, Jr., '36, as Vice-president for Research, Compo Shoe Machinery Corporation . . .

On the Horizon

June 16, 1958 — 24th Alumni Day, 1958, M.I.T. Campus in Cambridge. Morning Conference in Kresge Auditorium, 9:45 A.M. Luncheon in Du Pont Court, 12:00 Noon. Afternoon Program, 2:30 to 4:30 P.M. Exhibits of new facilities at M.I.T.; Social Hour on Briggs Field, 5:00 P.M.; Dinner in Rockwell Cage, 6:00 P.M.; Program in Rockwell Cage, 7:15 P.M. Boston Pops Orchestra Concert in Kresge Auditorium, 8:30 P.M.

November 8, 1958 — 13th M.I.T. Alumni Regional Conference, Albuquerque, N.M.

Joseph Morgan, '37, as Chairman, Physics Department, Texas Christian University . . . *Theodore Q. Eliot*, '42, as Head, Process Technical Service Department, Texas Butadiene and Chemical Corporation . . .

Benjamin Parran, 3d, '43, as Manager of Ordnance Sales, General Electric Company . . . *Paul F. Ely, Jr.*, '44, as Manager of Market Research, Bell and Howell Company, Chicago . . . *Robert Oppenlander, Jr.*, '44, as Comptroller, Delta Air Lines . . .

Louis H. Roddis, Jr., '44, as President, Pennsylvania Electric Company of Johnstown, Pa. . . . *Colonel John G. Zierdt*, '47, as Chief of Staff, Army Ordnance Missile Command . . . *William H. Shenkle*, '51, as General Manager, Instrument Division, Rockwell Manufacturing Company, Tulsa, Okla.

■ Special honors recently announced or awarded to Alumni and members of the Institute Faculty include:

To *Charles E. Smith*, '00, honorary membership, by the Connecticut Society of Civil Engineers . . . to *Marshall B. Dalton*, '15, the grade of Fellow, by the American Academy of Arts and Sciences . . . to *Edward H. Barry*, '16, the grade of Fellow, by the American Society of Mechanical Engineers . . .

To *Robert B. MacMullin*, '19, the 1958 Jacob F. Schoellkopf Medal "for his original contributions to the science of Chemical Engineering, and for his achievements at home and abroad as a consulting engineer, particularly in the field of industrial electrolytic processes," by the Western New York Section, American Chemical Society . . . to *Harold F. Smiddy*, '20, the Wallace Clark Award, by the Council for International Progress in Management . . .

To *Thomas K. Sherwood*, '24, *Martin Deutsch*, '37, and *Hatten S. Yoder, Jr.*, '48, membership, by the National Academy of Sciences . . .

To *Saul Namyet*, '40, the Clemens Herschel Award; to *Harl P. Aldrich, Jr.*, '47, the Structural Section Award; and to *Howard Simpson*, '48, the Desmond Fitz Gerald Medal; by the Boston Society of Civil Engineers . . .

To *Edward S. Carter, Jr.*, '51, the first George Mead Gold Medal, and to *Harold S. Oakes, Jr.*, '52, a George Mead Silver Medal, awards established by United Aircraft Corporation in memory of the late George Jackson Mead, '16 . . .

To *George H. Büchi*, Professor of Chemistry, the \$1,000 Fritzsche Award, by the American Chemical Society.

Change of Status

■ Effective June 30, five members of the Faculty and a member of the Library staff will achieve emeritus status. At the same time, 14 members of the Faculty become full professors, 18 will be promoted to associate professor, and 21 will be advanced to assistant professor. Not included in this tabulation are new appointments to be announced at a later date. Except where photographs were not available when this issue went to press, portraits of those retiring are shown at the bottom of this page; portraits of those promoted to full professorship also appear on these two pages.

Those for whom retirement becomes effective on June 30, with title of professor emeritus, are: Leicester F. Hamilton, '14, Professor of Analytical Chemistry and Executive Officer of the Department of Chemistry; George C. Manning, '20, Professor of Naval Architecture; Avery A. Morton, '24, Professor of Organic Chemistry; Walter C. Schumb, Professor of Inorganic Chemistry; and Evers Burtner, '15, Associate Professor of Naval Architecture and Marine Engineering. Professors Burtner, Hamilton, and Schumb will become lecturers for the following school year on a part-time basis. In addition, Mrs. Margaret M. de Le Vin, senior cataloguer in the Charles Hayden Memorial Library, also retires, but will continue her present work for the coming year on a part-time basis.

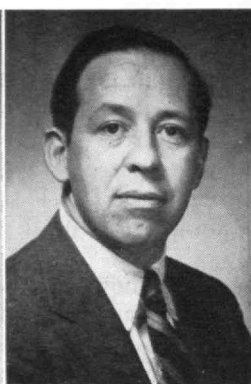
Professor Hamilton has been a member of the Institute's teaching staff since 1914 and was placed in charge of undergraduate instruction in chemistry in 1935. In the spring of 1942 he was made acting head of the Department of Chemistry. He has always taken an active interest in undergraduate life at the Institute. He served as chairman of the Dormitory Board from 1925 to 1949, and played a major role in organizing the 5:15 Club for commuting students. He has been secretary of the Faculty since 1953, and for the two years preceding was assistant secretary.

Professor Manning is a graduate of the United States Naval Academy with the Class of 1914 and received the S.M. degree from M.I.T. in 1920. He was a naval officer from 1917 to 1939 and joined the M.I.T. Faculty in 1936. During the past year he has been visiting professor at the University of São Paulo, Brazil, where he has directed work in that University's



M.I.T. Photos

E. C. Brown



G. H. Buchi



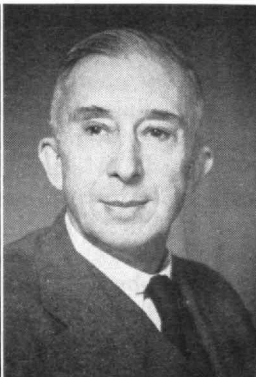
S. H. Crandall

ship-model towing tank. He is the author of four, and the co-author of three additional, works on naval design or related topics.

Professor Morton received the A.B. degree from Cotner College in 1913, and the Ph.D. degree from M.I.T. in 1924. He has been on the teaching staff of the Institute's Department of Chemistry since 1920, and during the past year, on leave of absence. He is author of *Laboratory Technique in Organic Chemistry* and *Chemistry of Heterocyclic Compounds*, and is well known for his work in synthetic rubber.

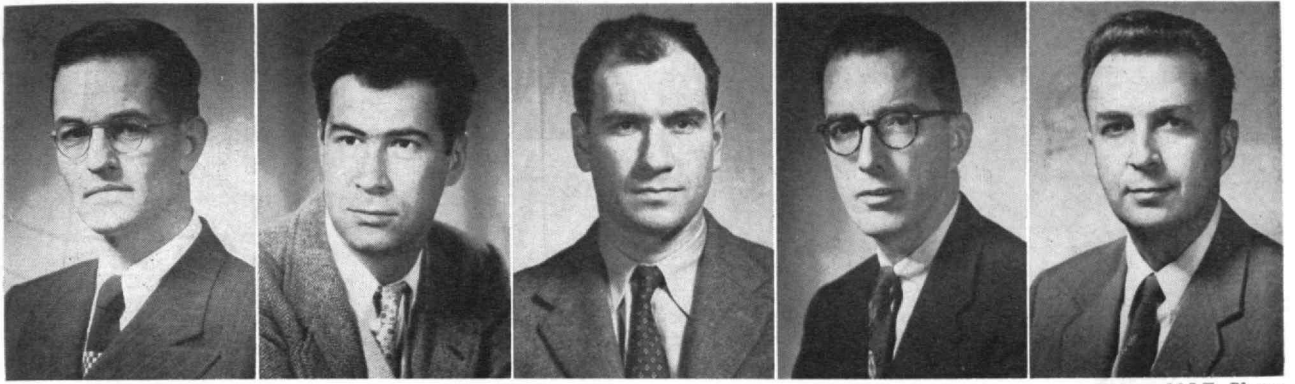
Professor Schumb received the A.B., A.M., and Ph.D. degrees from Harvard University in 1914, 1916, and 1918, respectively. He taught at Vassar College before joining the M.I.T. staff in 1920. From 1930-1945 he was director of the Research Laboratory in Inorganic Chemistry. Professor Schumb was one of the 12 people listed in the *Chemical Bulletin*, in 1947, as among the ablest chemists and chemical engineers in the United States.

Professor Burtner received the S.B. degree from M.I.T. in 1915 and began his lifelong association with the Institute immediately thereafter. During World War I, he worked in the Scientific Section of the Portsmouth Navy Yard which was then building submarines, and later served as port engineer and marine superintendent with John S. Emery Company. He became assistant professor in 1924, and associate professor in 1931. He is the author of a chapter on Marine Engineering in the *Handbook for Mechanical Engineers* by Marks. In 1944, Professor Burtner served on the Advisory Board of the New England Association of Naval Architects and Marine Engineers.



M.I.T. Photos

E. Burtner, '15 L. F. Hamilton, '14 G. C. Manning, '20 A. A. Morton, '24 W. C. Schumb



M.I.T. Photos

D. Durand F. L. Friedman, '49 D. H. Frisch, '47 M. J. Holley, Jr., '39 J. W. Irvine, Jr., '39

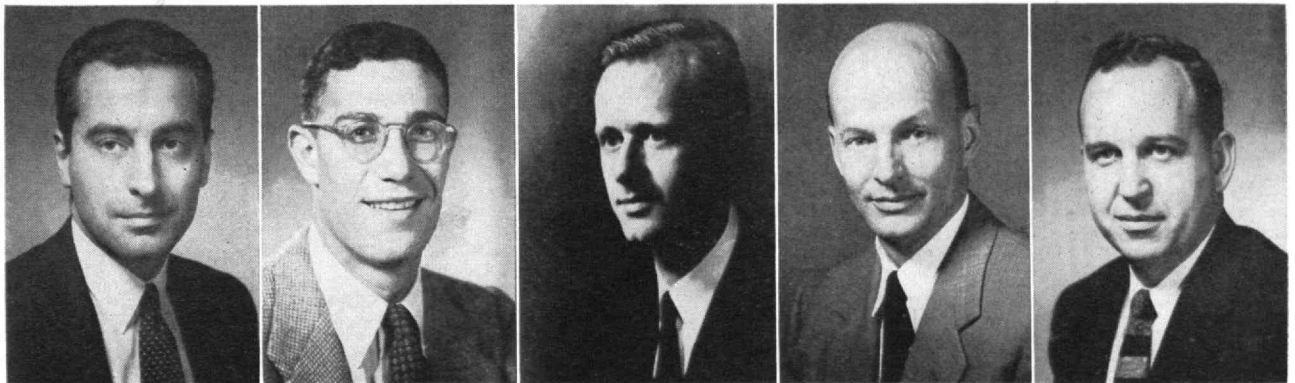
Mrs. de Le Vin was graduated from Simmons College in 1916 with the degree of S.B., and in 1945 received the M.A. degree from Boston University. She came to M.I.T. in 1927, when the main library of the Institute was located in the dome of Building 10. Mrs. de Le Vin was appointed as a member of the Institute's staff in 1947.

The 14 men who become full professors, beginning July 1, are: E. Cary Brown, Department of Economics and Social Science; George H. Büchi, Department of Chemistry; Stephen H. Crandall, '46, Department of Mechanical Engineering; David Durand, School of Industrial Management; Francis L. Friedman, '49, and David H. Frisch, '47, Department of Physics; Myle J. Holley, Jr., '39, Department of Civil and Sanitary Engineering; John W. Irvine, Jr., '39, Department of Chemistry; Roy Lamson (no portrait available), Department of Humanities; Ithiel deS. Pool and Robert M. Solow, Department of Economics and Social Science; C. Gardner Swain, Department of Chemistry; Theos J. Thompson, Department of Nuclear Engineering; and David C. White, Department of Electrical Engineering.

The following 18 men have been promoted to associate professor: Clyde M. Adams, Jr., '49, Department of Metallurgy; David O. Caldwell, Department of Physics; Alfred D. Chandler, Jr., Department of Humanities; Noam A. Chomsky, Department of Modern Languages; Melville Clark, Jr., Department of Nuclear Engineering; Morton Finston, '48, Department of Aeronautical Engineering; Frederick D. Greene, 2d, Department of Chemistry; Hermann A. Haus, '54, Department of Electrical Engineering;

John G. King, '50, Department of Physics; William L. Letwin, School of Industrial Management; Robert W. Mann, '50, Department of Mechanical Engineering; Ross E. McKinney, '49, Department of Civil and Sanitary Engineering; Erik L. Mollo-Christensen, '48, Department of Aeronautical Engineering; Jurgen Moser, Department of Mathematics; Robert C. Reid, '54, Department of Chemical Engineering; Isadore M. Singer, Department of Mathematics; Leon Trilling, Department of Aeronautical Engineering; and John S. Waugh, Department of Chemistry.

The 20 men who become assistant professors are: Albert K. Ando, Department of Economics; John C. Chato, Department of Mechanical Engineering; Charles M. Gray, Department of Humanities; Elias P. Gyftopoulos, Department of Electrical Engineering; Imre Halasz, Department of Architecture; Lawrence C. Hoagland, '55, Department of Mechanical Engineering; Harry Hughes, Department of Geology; Ralph C. James, Department of Economics; Theodore R. Madden, '49, Department of Geology; Arthur P. Mattuck, Department of Mathematics; Charles R. Niehaus, Department of Humanities; Irwin A. Pless, Department of Physics; Herbert H. Richardson, '54, Department of Mechanical Engineering; Rolf P. Scharenberg, Department of Physics; Joseph L. Smith, Jr., Department of Mechanical Engineering; Bernard P. Spring, '51, Department of Architecture; James M. Symons, '55, Department of Civil and Sanitary Engineering; Seth P. Tillman, Department of Economics; William A. Youngblood, Department of Electrical Engineering; and Zenon S. Zannetos, '55, School of Industrial Management.

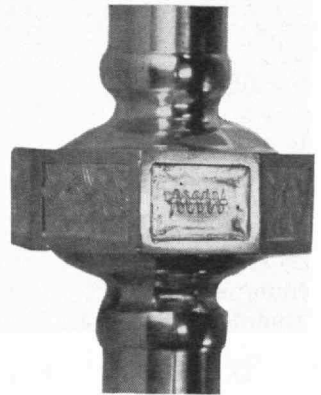
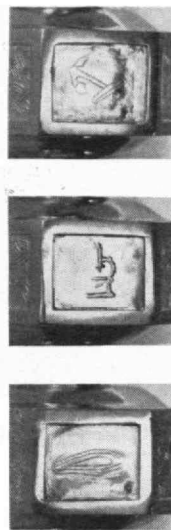


M.I.T. Photos

I. deS. Pool R. M. Solow C. G. Swain T. J. Thompson D. C. White



General view of the M.I.T. mace, which is 46 inches long, is shown at the left, with details of knop embossing shown in illustrations at right and bottom of page. Of course the beaver (top of mace) is the mascot of Technology's engineers. Seal of the Institute is on sphere at bottom. Names of M.I.T. presidents are engraved on staff between two lower octagonal knops. Alternate panels of octagonal knops are embossed with symbols representing fields of study at the Institute.



M.I.T. Photos

M.I.T. Mace

■ As recorded in the July, 1957, issue of *The Review* (page 515), the Institute is the proud possessor of a mace. This splendid ceremonial device, a gift from the Class of 1907, represents years of painstaking craftsmanship on the part of Leverett H. Cutten, '07. As the time nears for its use in the commencement procession, *The Review* is happy to show, as was not possible a year ago, some of the details of this *objet d'art*.

Originally a metal club designed to be used against warriors in armor, the medieval mace has become transformed into a more peaceful instrument. When placed on the table in front of a high-ranking officer, such as the president of a university, the mace is a symbol of authority granted that official to conduct the business of his office.

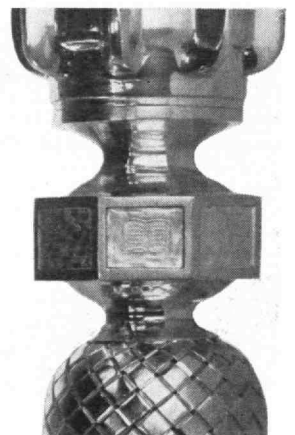
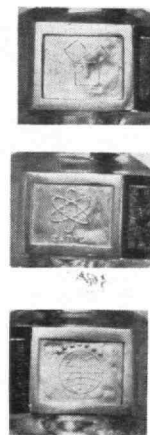
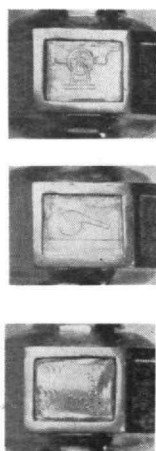
The handsome M.I.T. mace is 46 inches long with maximum diameter of about 9 inches. It is made of silver and is gold plated. The stylized eight-bladed head is crested with a beaver — the engineer of the animal world. Below the head is a spherical woven knop as decoration and three octagonal knops having embossed symbols. On the staff below the middle octagonal knop are engraved the names of the presidents of M.I.T., together with the years of their presidencies.

At the bottom of the mace is a sphere, or pommel, on one side of which is the Institute's seal. Separated from the seal by oak leaves, the other side shows the inscription. The oak leaves and acorn at the base of the mace are symbols of strength.

Perhaps the most interesting aspect of the M.I.T. mace is the group of symbols embossed on the knops to represent the fields of the Institute's educational endeavors. Mr. Cutten did not intend that the symbols selected should represent courses of instruction. Rather, he sought symbols expressing our technological culture and whose meanings would remain unchanged throughout the years.

Thus there are symbols for the general areas of physics (nuclear orbits and the Einstein equation), mathematics (diagram for the Pythagorean theorem), humanities (open book), biology (microscope), mechanics (enmeshed gears and turbine blades), electromagnetism (current carrying coil), chemistry (retort), civil engineering (transit), earth sciences (globe and stars), naval science (anchor), architecture (Ionic capital), and aeronautics (wing section).

The long proportions of the mace and its many curved surfaces make it difficult, if not impossible, for any photograph even to suggest the true beauty of Mr. Cutten's silversmith handicraft.



Alumni Day, 1958

■ Appropriately enough, the theme for this year's Alumni Day symposium will be "Education for a Changing World." The symposium will be held, beginning at 9:45 A.M. on Monday, June 16, in Kresge Auditorium on the M.I.T. Campus, with Association President Gilbert M. Roddy, '31, presiding. Symposium speakers will be three professors at the Institute: Morris Cohen, '33, Professor of Physical Metallurgy; Edwin R. Gilliland, '33, Professor of Chemical Engineering and chairman of the Engineering Education Committee; and Holt Ashley, '48, Associate Professor of Aeronautical Engineering.

As usual, registration for Alumni Day events will be in the new Rogers Building lobby at 77 Massachusetts Avenue, Cambridge. All who plan to attend this interesting day's events are urged to register by mail in advance.

The Alumni Day luncheon, providing opportunity to renew old acquaintance, will be held in Du Pont Court at 12:00 Noon. Addresses concerning the Institute's and the nation's scientific and educational programs will be delivered by Julius A. Stratton, '23, Acting President of M.I.T. and by James R. Killian, Jr., '26, on leave from his M.I.T. presidential post to serve as Special Assistant to President Eisenhower for Science and Technology.

At 2:30 P.M., Alumni may see the M.I.T. Nuclear Reactor; the Computation Center where the I.B.M. 704 computer will demonstrate how satellite orbits are computed; exhibits on space travel, space navigation; and laboratory equipment recently designed by the Physical Science Study Committee for high school physics courses.

A social hour on Briggs Field will precede the Alumni Day banquet which is to be held at 6:00 P.M. in Rockwell Cage. Following the highly successful practice initiated last year, the Boston Pops Orchestra, with Arthur Fiedler conducting, will conclude the day's events in Kresge Auditorium.

Twenty-five Years Ago This Month . . .

■ On June 6, 1933, at commencement exercises held at Symphony Hall to mark the graduation of the Institute's 66th class, President Karl T. Compton formally created 423 new bachelors and 146 masters of science; 22 new bachelors and 7 masters in architecture; and 10 and 17 new doctors of philosophy and science, respectively.

A. Lawrence Lowell, Life Member of the Institute Corporation and retiring President of Harvard University, delivered the commencement oration to the Class of 1933, his subject being: "The Art of Examination." He said in part:

"From teachers to committees of the United States Senate, inquisitors are apt to be unpopular with their victims. A generation ago the proceeding was often looked upon in the schools as unnecessary and objectionable. The teacher asserted that he knew how his pupils were doing, and regarded an examination as much like an indictment—a thing not to be used

against good citizens—and as implying at least a suspicion of misconduct. . . .

"This is not unnatural; for examinations of that kind are given mainly for purposes of discipline—that is, to see whether the pupil has really done his work, the exact rating of individuals being of less importance. . . .

"Another object in examinations—that of measurement, rather than discipline—has lately become prominent. The increasing number of applicants for higher education, the conviction that too many college students benefit little from their instruction, a desire for a better criterion of what we are trying to do and how well we are doing it have caused a greatly increased interest in tests of ability, of attainment, and of promising qualities. . . .

"There is a third function of examinations, where the main object is neither discipline nor measurement, but education; and that aspect of the matter has not hitherto been much discussed. . . .

"Every examination, whose nature is known, set at the close of a period of study upon the subjects studied, will affect the attitude of the students toward those subjects for good or evil, becoming to that extent an integral part of the process of education; and the more it is considered by the examiners from this point of view the better its effect.

"The second way in which an examination may be a valuable part of the process of education is by requiring a systematic expression of thought. Some wise man has remarked that no one knows a subject in an intellectual way unless he can talk or write about it—that is, can express his ideas upon it. For to express oneself involves arranging one's thoughts in order, formulating, and thus clarifying them—a very different thing from answering Yes or No to a series of questions formulated by the examiner. The great art in life lies less in solving problems than in discovering the problems to be solved, and to that an examination may, in part at least, direct attention. By so doing, it can reduce the comparative weight of mere memorizing, and cause the student to make the subject his own, leading him to work it over in his mind until he can express it, not in the terms of a book or statement by a professor, but as it comes to stand in the fabric of his own thought. If he knows that at the close of his studies he will be called upon to do this, he will be inclined to prepare himself for an orderly statement of what he has learned. . . .

"Education is a vast and complex thing of which we have learned something by experience, by theory not very much; and verily the art of examination is difficult, for it aims at several distinct objects at once. These things are not to be solved by a formula, nor are any formulae either exact or essential, for there may be many roads to the same end. But one matter that has not yet received the attention it deserves, and is well worth study, is that of examinations as a vital factor in the educational process."

■ The Institute mourned the passing on June 1, 1933, of *William P. Ryan*, '18, Head of the Department of Chemical Engineering since 1929; and on June 12 of *Edward F. Miller*, '86, Head of the Department of Mechanical Engineering since 1911.

Visiting Committee Report on Metallurgy

■ A meeting of the Visiting Committee on the Department of Metallurgy* was held in the Given Room at M.I.T. on December 3, 1957. Present were: Chairman Hanley, Messrs. Given, Hollomon, LaQue, Malozemoff, Milliken, and Sawyer. C. Richard Soderberg, '20, Dean of the School of Engineering, John Chipman, Head of the Department of Metallurgy, and various Faculty members from the Department also attended the meeting.

Dr. Chipman opened the meeting by summarizing the report of last year's Visiting Committee which had stressed the need of industry for men with a broad training in the field of materials, with emphasis upon solid state technology, as well as study of metals. The Committee had recommended that the possibility of offering a degree in materials engineering be studied by the Department. It was reported that the matter was under serious consideration by the Institute and that a Committee on Materials Engineering, composed of representatives of the several engineering departments, had been appointed under the chairmanship of Professor Morris Cohen, '33.

It was the opinion of the Visiting Committee that any training in materials engineering should be concentrated in the graduate years, with the possibility of offering a new graduate degree in the field. The program should be as flexible as possible in order to draw students from many departments and to enable students to enter different fields. The Committee felt that visiting professors should be invited from industry to strengthen work in materials and that fellowships and other types of financial aid would be needed to attract graduate students into the course. The Committee pointed out that consideration of any expansion of teaching into the field of materials emphasizes the need of additional space and personnel.

Considerable time was spent discussing the research work carried on in the Department, and the methods of financing such research. It was evident that the chief problems rested in securing financing on a long-range basis, rather than on the year-to-year basis which is now common practice. In many projects, there is also a severe problem of securing expensive equipment and providing funds for maintenance. The Committee felt that the matter of overhead charges by the Institute, and the method of determining total charges for research programs, should be studied in the hope of alleviating some of the Department's financial problems in research.

It was mentioned that undergraduates, particularly below the junior year, were having difficulty in securing summer employment needed for their professional training. The Committee felt that, in all likelihood, companies would hire sophomores as well as juniors, but that it was not possible to put students on manual jobs because of union restrictions. It was suggested that the Department contact recruiting

personnel to see whether companies would consider hiring more undergraduates.

It was reported to the Committee that the entire subject of undergraduate curricula was the subject of long and arduous debate and study by the Faculty at the present time.

Alumni Council Meeting

■ Gilbert M. Roddy, '31, President of the Association, opened the 331st meeting of the Alumni Council, held on April 28 at the M.I.T. Faculty Club, which was attended by 116 members and guests. Minutes of the meeting of March 31 were approved, and Donald G. Robbins, '07, read a resolution on the late George A. Crane, '07, which was accepted by a standing, silent vote.

As Secretary of the Association, Donald P. Severance, '38, reported that, between April 1 and April 25, nine M.I.T. clubs had been visited by 15 M.I.T. representatives. Also announced were results of the recent election, as recorded on pages 397 and 398 of this issue. Also reported were the nominations of the Executive Committee for chairmen of various important committees, to serve beginning July 1.

For the Alumni Fund Board, Avery H. Stanton, '25, reported that 11,457 Alumni had contributed \$357,000 to the Alumni Fund as of April 25. This represents an increase of 6 per cent in number of contributors and a 16 per cent increase in amount, compared with figures of the corresponding date a year ago. The Alumni Council was reported as having had 100 per cent participation in the Alumni Fund.

David W. Skinner, '23, chairman of Alumni Day, 1958, reported on plans for the symposium, exhibits of new M.I.T. facilities, social affairs, and the Pops concert to be held at M.I.T. on Monday, June 16, as noted on pages 399 and 403 of this issue.

John D. Linsley, Assistant Professor of Physics described the cosmic-ray experiments to be conducted by M.I.T., beginning in June, on a 2,500-acre ranch in New Mexico. The purpose of this research is to gain greater insight into the nature of radiation received from outer space and to determine whether or not cosmic-ray showers originate in any particular portion of the sky. The experiments are intended to indicate how cosmic-ray showers originate, as well as where they originate. Nineteen stations, each with four units (a yard in diameter) will be used to catch and to count cosmic rays.

F. Leroy Foster, '25, Director of the Division of Sponsored Research, spoke on the effects of sponsored research on the university. Research work sponsored by short-term contracts places an unnecessary load on the Faculty and the Administration, and requires the university to assume undesirable risks. But such research is a very effective way of keeping Faculty members abreast of current developments, and provides an excellent opportunity for training of graduate students, and even undergraduates. In general, such research is undertaken only if M.I.T. has proper facilities, if the program contributes to its educational program, and if a Faculty member is interested in undertaking it.

(Continued on page 420)

*Members of this Committee for 1957-1958 are: Edward J. Hanley, '24, chairman, William B. Given, Jr., '08, C. Baldwin Sawyer, '17, Augustus B. Kinzel, '21, Frank R. Milliken, '34, John H. Hollomon, '40, Frank L. LaQue, and Plato Malozemoff.

Our Atomic Policy

Scientific conferences have demonstrated that men of all nations can work together for man's welfare, and will do so if proper teamwork environment is created

by WALTER G. WHITMAN

AT Arden House, in the Catskills last fall, I attended a meeting on atomic energy — the 12th meeting of the American Assembly. Four former commissioners of the Atomic Energy Commission and one of its present members were present. Among the others were industrialists, engineers, scientists, lawyers, editors, economists, bankers, educators, and representatives from the labor movements, and all were leaders in their fields.

Our three days of discussion certainly did not resolve all the problems of our atomic power policy; in fact, there were some sharp disagreements on a number of issues. But on one point the agreement was unanimous — all recognized the need for the people of our country to get a clearer picture of the program and policy of the United States with respect to atomic energy. This group of leaders had found that they themselves were uninformed, or even misinformed, about many of the salient facts.

The following comments can represent only a personal interpretation, but I will try to make them reasonably unbiased. My views are not the opinions of the American Assembly, and certainly they do not represent an official policy of the Atomic Energy Commission. But I have looked at our atomic energy program from three different points of view throughout a number of years and have gained some insight from each experience.

For six years I was a member of the General Advisory Committee to the Atomic Energy Commission. For two of those years I was in the Pentagon as head of the Research and Development Board, and for another year I worked with the United Nations on the Atoms for Peace Program.

Even during World War II, careful thought was given to the use of atomic energy for production of power. In that time of crisis, however, the nation's entire effort had to be directed to winning the war, and postwar developments had to wait. Immediately after the war, some very extravagant claims were made about atomic power. It was stated, for example, that within a few years civilian nuclear power would be competitive with that derived from coal in the United States. This irresponsible and deplorable over-optimism had serious repercussions. Sober thinking soon showed the absurdity of such claims — and enthusiasm flagged.

Atomic energy for military propulsion was quite another matter. In this case, the cost per kilowatt-

hour of the power produced might be entirely irrelevant to the military value of an atom-powered propulsion unit. As you know, the Navy has been notably successful in developing the atomic-powered submarine, and is now applying nuclear propulsion to surface vessels as well.

The Navy's program did not lead to economic power from the atom, and was not intended to. But, in my judgment, the Navy's application to ship propulsion has had very beneficial effects in the development of atomic power. It has made available a great deal of experience in atomic plants, it has created an industrial base for the production of power reactors, and it has resulted in the development of new materials — such as zirconium — which are especially useful for reactors.

On the other hand, the nonmilitary use of nuclear power was relatively neglected after World War II. The Atomic Energy Commission was preoccupied with weapons, particularly after the first Russian bomb was exploded. I joined the Advisory Committee in 1950, and I recall my own attitude about that time. Along with most people, I could not see why we should get excited about developing expensive atomic power when this country had adequate supplies of relatively cheap coal, oil, and gas to last for quite a period. Certainly atomic power would be useful sometime, but where was the urgency?

Our government changed its position about six years ago when it began to examine the international implications of the development of atomic power. The United States stood before the world as the leader in the development of atomic energy. The leader for what? For weapons. There was a reappraisal of the whole situation. Wasn't it most important that we should also assume leadership in the development of peaceful use of the atom? *We* might have adequate supply of fuels, but what about other countries who were not so blessed?

In December, 1953, President Eisenhower addressed the General Assembly of the United Nations in what I regard as the greatest speech by a world statesman since the war. After pointing out the utter annihilation of nuclear warfare, he called on all nations to unite in developing atomic power for the benefit of man rather than for his destruction. As you know, that inspired challenge initiated the subsequent Atoms for Peace Conference, which was held in Geneva in 1955, and the new International

Atomic Energy Agency which was established in Vienna only last fall.

Consistent with the President's policy, the Atomic Energy Commission developed a positive program on reactors involving several hundreds of millions of dollars. The purpose of the new program was to accelerate the knowledge and technology on the most promising types of reactors for power production. It was fully realized that none of these prototype reactors could produce competitive power; that first we had to build nuclear plants, gain experience in their design and construction, discover the operating difficulties, surmount them, and then build a second generation of the more promising types. By the time a third generation was built, we might have reliable and efficient atomic plants which would be competitively useful in certain areas. I shall not try to describe these plants. The point is that our present units are built to develop knowledge and experience and are not intended to feed large amounts of electricity into the country's power grid. In all these plants, the heat of fission is used to make steam; steam then goes into the power-producing turbines just as if the steam had come from a boiler fired by coal, oil, or gas.

About this time the aspect of private financing began to be emphasized in the planning. You all realize that when the federal government pays all the bills the incentives to build and to operate economically are rather marginal. Economies could be introduced if private capital were involved — if private money were at risk.

The new Atomic Energy Act of 1954 was designed to permit private investment in a field that had previously been a government monopoly. In retrospect, we can see that the framers of the 1954 Act were a bit over-optimistic in their appraisal of the economics.

The A.E.C. has issued a series of invitations to industry to present power plant projects for approval. The response to these invitations has demonstrated, with few exceptions, that the economic justification for private investment in atomic power plants does not yet exist in the United States. At the same time, however, the A.E.C. invitations have drawn many proposals from publicly financed companies who would build with government funds. This has injected domestic political issues to an alarming degree. The basic intent of the policy — to advance the development of atomic power by introducing the responsibilities which private capital might contribute — seems to have been forgotten in the heat of political battle. I regard this as a most serious deterrent to progress.

The situation in other countries is different from that in the United States, but the Geneva Conference of 1955 showed that Russia, England, and Canada were making real progress.

At first, the British built big reactors for the production of plutonium for weapons, just as we did. Later on, they built the Calder Hall type of reactor which produces plutonium while generating commercial power as well. The British are embarked on a tremendous investment for producing atomic power in the British Isles. Why are they doing it? They are quite frank in their answer. British coal is no longer adequate for their expanding power needs. They can

get oil from the Mid-East, but about a year ago there was a serious crisis at Suez, and the Mid-East situation is very unsettled. The British are also buying coal from the United States. By the time that U.S. coal is delivered in England, it costs about twice what it costs here in New England. The British feel quite justified in building atomic plants which will make power at a much higher cost than would be competitive in the United States.

The situation in western Europe is very similar. There, coal is inadequate for industrial needs. Western Europe, too, must have additional power production if the people are to build up the economy to meet its planned growth. Western Europe, too, is buying United States coal at about the same price the British pay and also in scarce dollars; it also buys oil from the troubled Mid-East. Japan is in somewhat similar condition. Although an industrialized country with good water power, Japan is reaching the limit of its energy resources and needs additional fuel.

The situation in Russia is not quite so clear. Undoubtedly, much of Russia's interest in atomic power arises from its international implications, just as it does with us. But Russia does have a definite fuel shortage in western Russia which has to be met by transporting coal from Siberia, a distance of some 1,500 miles. When the cost for that rail freight is included in the cost of coal, you have rather expensive power. If we had a common yardstick, I would imagine that additional power from Siberian coal may be twice as expensive in Moscow as it is here in Boston.

I would like to summarize this part of my comments by asking a question — "Why should we be interested in atomic power?" — and answer it with three points: (1) Over the long term we will need atomic power in the United States, although there is certainly no urgency at this time; (2) Atomic power is, however, urgently needed in other countries, notably in Europe and Japan; (3) Most importantly, our world responsibilities require that the United States lead in the peaceful development of the atom. The President understands this — the citizenry must understand it if the necessary federal program is to be supported.

Viewed in this light, you can understand why I so deplore the injection of domestic politics and of the public power-private power struggle into a program where the fundamental issues are international in character.

Powerful Forces for Understanding

Let me now talk on a somewhat broader basis about a concept which, although less tangible, is being shaped, for good or ill, by our thoughts and actions every day. I have emphasized that the international aspects of the atomic-power policy are the dominant ones. This conclusion was generally accepted in the American Assembly at its meeting last fall. Yet almost everyone in that group instinctively thought of the problems and of possible solutions *only* in terms of the Cold War.

We may not see clearly any practicable alternative to the Cold War. But deep down, anyone who is



The United Nations team of scientific secretaries is shown above. Seated (left to right) are: Michel Trocheris, France; John Gaunt, U.K.; Reinosuke Hara, Japan; Brian Urquhart, Executive Officer, United Nations; Viktor S. Vavilov, Deputy Secretary-General, U.S.S.R.; Walter G. Whitman, '17, Conference Secretary-General, Frederic de Hoffmann, U.S.; Elwyn O. Hughes, Canada; Donald J. Dewar, Canada; and Jose Leite Lopes, Brazil. Standing (left to right) are: Andre Finkelstein, France; Cesar A. Sastre, Argentina; Brahm Prakash, '49, India; Jakob Goedkoop, Netherlands; Ivan D. Rojanski, U.S.S.R.; Robert A. Charpie, U.S.; Nikolai A. Dobrotin, U.S.S.R.; Leonard F. Lamerton, U.K.; and Derrik J. Littler, U.K. Joining the team later (but not shown above) were: Aleksander Milojevic, Yugoslavia; Carlo Polvani, Italy; Abdus Salam, Pakistan, and Ivan Ulehla, Czechoslovakia.

aware of the destructiveness of the present weapons, and of the ease with which they can be delivered, must know that a policy which is based entirely on the Cold War is utterly sterile; it cannot bring peace to this world. It will lead inexorably to world suicide.

In March, 1955, I was in Moscow on a mission for the United Nations. My task was to enlist the co-operation of the Russians in the forthcoming Atoms for Peace Conference. Many people, including quite a few of my friends, doubted the wisdom of trying to hold this conference. They feared that it would be another propaganda battle which would merely result in a setback to world progress. It was readily apparent that the critical problem was to dispel suspicion and distrust about the conference on the part of the Russians, as well as distrust of Russian intentions by the United States. We had somehow to establish confidence that this would be a true scientific congress in which nations would tell of their knowledge and of their plans.

It seemed to me that the most direct and constructive approach was to go to Russia and try to tell the Russians as much as possible about the plans. I began by asking the Russians whether I would be welcome in Moscow. Remember, at this time, early in 1955, the Iron Curtain was substantially impregnable. The answer from Moscow was: "Yes."

In retrospect, I regard that short visit to Moscow as most critical to the subsequent success of the con-

ference. I could tell the Russians about the plans of the Western nations — the types of papers they intended to present, the caliber of people who were coming, and something about the exhibits which were to be set up at Geneva. Moreover, I needed Russian help in many things that had to be done, notably in the recruiting of some younger scientists to serve with me in the United Nations. The Russians were obviously startled by such frankness, but their response was quick and very gratifying. They said they would do practically everything that I asked them to do, and, furthermore, they delivered on those promises.

One minor incident on that trip was rather revealing to me; it is unimportant except that it was revealing. Remember, we knew so little about the Russians at that time, and there was quite a tendency to think that they all had horns and a tail. They took me to see a high-energy accelerator, and through the interpreter, carefully explained the accelerator to me. At this point a Russian beside me, who could speak English, leaned over confidentially and said: "You know, we are very proud of the work that Dr. Veksler is doing on this accelerator. We would so like to build a bigger accelerator, but that takes a tremendous amount of iron. Sometimes we think it would be a good idea to use some of the Iron Curtain to build a bigger accelerator." To one not prepared for this sort of a comment, my education came pretty fast.

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Technology in a Free Society

The betterment of humanity comes from effort and striving. But technology provides means for creating and distributing new wealth, when proper incentives are provided to produce

by **JOHN B. RAE**

IT is a fair guess that history will record the launching of the first space satellite as the point at which the bulk of the American people finally, belatedly, and for the most part abruptly, became aware that the advance of technology was posing urgent problems for their whole way of life, quite apart from the matter of mere physical survival. The awakening began with the atom bomb, but for some reason the explosion at Hiroshima failed to jolt us to anything like the same extent as the launching of Sputnik. Apparently this was because we could regard the bomb as "ours" and therefore as comforting evidence of our inherent superiority in technological skill and "know-how." At any rate, the fact of this new-style Great Awakening is sufficiently obvious in the contemporary American scene.

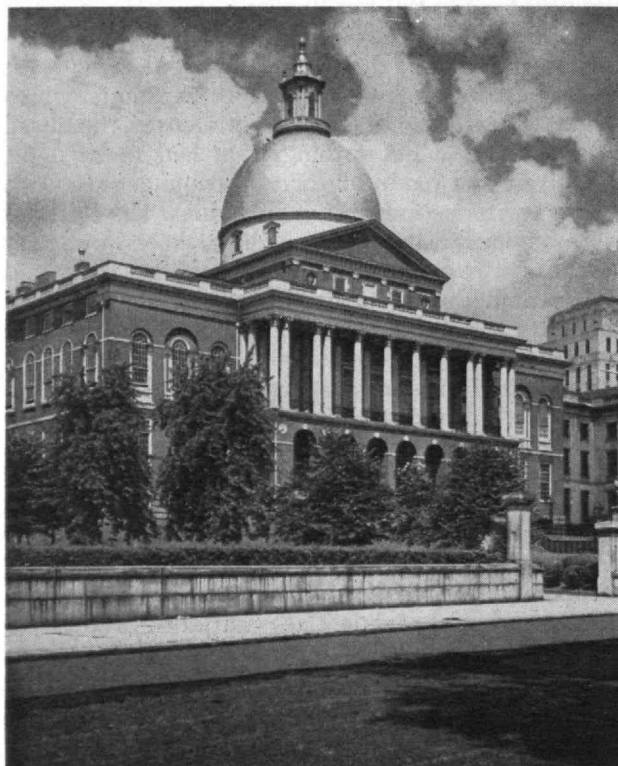
What the future historian will record about the response of the American people is another matter. We have, we may devoutly hope, recovered from the first hysterical reaction, which might well have convinced a stranger to the American scene (a visitor from outer space, for instance) that all our techno-

logical achievements, our unequaled facilities for mass production and distribution, our resources in managerial and technical skill had somehow vanished overnight, and that our entire educational system had suddenly become worthless. A deflating of complacency and a healthy soul-searching is a very profitable experience. If, however, we give way to our doubts and fears, if we lack faith in our own ideals and institutions, then we will assuredly blunder into the very evils we want to avoid.

The magnitude of the problem is indisputable. Technology has put awesome power into our hands, which can be used to enhance the well-being of mankind by multiplying enormously our ability to produce goods and services — or it can be used for destruction on a scale threatening the extinction of the human race. The question of whether man is to be master of, or mastered by, his machines has been asked before; apparently the time is fast approaching when it must be answered.

This is not going to be an easy task, and we shall certainly fail unless we keep in plain sight one vital factor: namely, that technology is a means and not an end. There has been plenty of exhortation over the last several months about the need for preserving our leadership in science and technology. No one will seriously quarrel with this objective, but some clarification of purpose would be helpful. Technology can serve a variety of ends, both good and bad. It can raise standards of living and help to promote a fuller life for the individual; it can also be used to oppress peoples who are less well equipped. If we have and intend to preserve a technological superiority, we have also to decide what use we wish to make of it. It is meaningless to demand that we stay ahead in the technological race merely for the sake of being ahead. And if we are wise, we will consider our aims in the light of experience.

Here in the United States we have a society in which the fruits of technology are more extensively utilized and more widely distributed than anywhere else in the world. It is not a perfect society, but then no human society ever has been perfect, and ours has at least the great merit of having made possible a higher standard of living for a larger proportion of its people than any other that the world has seen. This is a feat which cannot be written off to historical accident or sheer luck. We have been well endowed with natural resources but other parts of the earth are just as rich. Russia has more territory than we have, China has more people, and either one has at least as much potential wealth. We have just been



Raymond E. Hanson, '03

Nothing in history suggests that a healthy society can exist if people are conditioned to take it for granted that government will settle all their problems for them.

made acutely aware that we have no monopoly on talent. In short, the explanation for the American achievement has to be sought elsewhere, and the obvious place to look is in the record of our own past.

The United States began as what is now euphemistically termed an "underdeveloped area," and its people had to do their own developing. European capital and technical skill contributed much to our economic growth, but it did so on a business basis, in the expectation of getting a return. This situation was all to the good. The American people were thrown on their own resources and ingenuity, and they found the key to progress in a social order which provided freedom for creative ability to find its own outlets. In the area of technology, the person with an idea for a new product, or a better way of making an existing product, was free to go ahead and try.

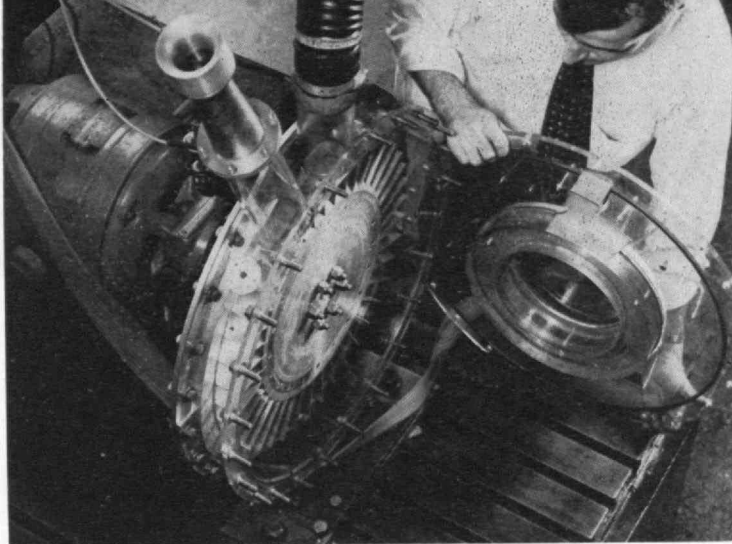
He might not succeed. We frequently forget that the "unalienable right" listed in the Declaration of Independence is the "pursuit of happiness"; there is no guarantee that we will catch it. Nevertheless, if we take a few names at random — Colt, Ford, Edison, Kettering, Whitney, Westinghouse — it is clear that the man with ideas and the ability to implement them has found ample opportunity in the American environment, and this freedom of opportunity is the vital ingredient in our economic achievements.

There are those who claim that these opportunities no longer exist in an era of great corporations and organized research. The growth of electronics in the last 10 years might be sufficient refutation, but there is more to be said. However much business organization may have changed, it has never reached the point of having a surplus of competent leadership and creative talent. The individual who possesses these qualities is still reasonably certain of being given every chance to display them.

If we wish to maintain this freedom of enterprise we had better recognize that it is an extraordinarily difficult thing to do. Making a free society function calls for endless patience, willingness to compromise, and acceptance of human perversity and weakness as facts that have to be lived with. Furthermore, an industrial civilization is a highly complicated mechanism, which requires a greater degree of regulation by governmental authority than the simpler economies of the past — with the attendant risk, human nature being what it is, that the itch to regulate will feed on itself and get out of control.

This, in fact, is where the greatest danger to our free society lies. Very few Americans would consciously choose to replace our way of life with the brutal tyranny of communism, yet we can drift into something very like it without realizing what we are doing. We might do it from panic. We are, for example, quite properly concerned about deficiencies in American education, but it does not follow that the remedy is to rush blindly into adoption of Russian educational methods simply because the Russians may be turning out more scientists and engineers than we are. Apart from the fact that the Russian educational system also has its flaws,⁹ there is still

⁹Alexander G. Korol, *Soviet Education for Science and Technology* (New York: The Technology Press of M.I.T. and John Wiley and Sons, Inc., 1957).



M.I.T. Photo

The most distinctive and greatest American contribution to technology has been mass production and the concept that benefits of technological progress should be passed along in the form of higher incomes and lower prices.

the important element of purpose: before we go in for the mass production of scientists and engineers, we might take time to consider what kind of scientists and engineers will make the most effective contribution to the way of life which we hope to maintain in the free world.

Soviet technology has made some spectacular achievements, for which it is entitled to full credit. There is no evidence, however, that it is doing the Russian people much good, or that it is likely to in the foreseeable future. Technology has no built-in mechanism for distributing the wealth it creates; the decisions on how this is to be done have to be made by human agencies. In the collective society, this agency is an omniscient (in its own eyes) planning authority. When it makes mistakes — as it frequently does, infallibility being a divine and not a human attribute — the people pay the penalty. They go without. The American method is less orderly on paper and infinitely better in practice. Decisions on production and distribution are ordinarily made by that much-abused character, the businessman. If he guesses wrong, somebody else gets his customers — but the goods still get produced.

Yet the social planners with us too, and they are certain to use the technological crisis as an argument for further restriction of private enterprise. We will be told that science and technology have created a situation so novel that we have no option but to entrust our destinies to the bright boys who know all the answers. It will, of course, be couched in more high-sounding terms. Not so long ago the selling point was a lot of fine talk about human rights being more important than property rights — this despite an impressive volume of evidence from history demonstrating that the right to ownership of what one has earned is among the most fundamental of all human rights. Even without going into history, the world about us provides plenty of examples to show that where property rights are set aside, where the sanctity of contracts is disregarded, other rights are treated casually also. A government which can justify the confiscation of property by calling it na-

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Precious Commonplace

All forms of life depend upon a natural resource that is useful only when in the right place at the right time in a sufficiently pure state. Yet man is prodigal of water

by **FREDERIC W. NORDSIEK**

WATER, one of the most abundant substances on earth, is a precious natural resource that presents a paradox. The world's stores of water are virtually indestructible; yet mankind is as prodigal of this resource as he is of forests, coal, petroleum, and other natural gifts. Man wastes water by displacing it and by polluting it; for water is useful only when it is in the right place at the right time, and in a suitable state of purity.

About 30 inches of rain have, on the average, fallen upon the United States every year since the Weather Bureau of the federal government began to accumulate these data in 1870. Unfortunately this rainfall is not uniformly spread across the country; some areas are parched, while others struggle against flash floods, erosion, and such consequences of too much water.

Some 70 per cent or more of the limpid gift of rainfall is immediately pre-empted by living plants, and returned by them directly to the atmosphere. But still enough water remains, if properly handled and equitably distributed, to more than satisfy America's Gargantuan appetites for this fluid. For the citizens of this country are pre-eminently the water gluttons of the world; this is not a term of opprobrium, for it reflects cleanly personal habits, high standards of living, and a mammoth industrial development. Domestic sewage in this country is much more dilute than in Europe, because Americans take many baths, and enjoy water-greedy home appliances, such as automatic garbage disposal units that flush refuse down the drain, dishwashing machines, clothes washers, and air-conditioning equipment. The citizens of Chicago — most lavish water users of all United States big-city residents — consume water at the extraordinary rate of 229 gallons per person per day. American industry gulps down 95 billion gallons of water each year. A still larger user of water — just how much larger is not precisely known — is irrigation for agricultural purposes.

But the engineering and conservation aspects of water cannot be covered adequately here; the foregoing comments were set down mainly to show the global importance of water, and to paint a backdrop against which to depict the biological significance of this substance.

Living Water

Aside from their need for oxygen, the most pressing demand of animals and plants living today is their requirement for water. This need is scarcely sur-

prising when we acknowledge that water constitutes from about 60 per cent to about 99 per cent of protoplasm, the living juice of all plant and animal cells. Water is useful biologically for much the same reason that it is valuable domestically and industrially; it is the universal solvent. This means that water can dissolve and carry in solution a greater variety of gases, liquids, and solids than can any other fluid.

Animals and plants dwelling in oceans, lakes, ponds, rivers, and brooks obtain their oxygen from the waters that surround them, where it is available abundantly in solution — unless man has wantonly polluted the water with oxygen pre-empting waste materials. Land-dwelling plants and animals take their oxygen directly from the air. But within the tissues of all plants, and of all animals — except those whose blood contains an oxygen-transporting pigment, such as the hemoglobin in mammalian blood — water again performs its oxygen-bearing function. Oxygen in water solution is brought to every living cell, where it is used for the oxidative processes of metabolism that sustain life. In the same way, nutrients in aqueous solution are borne by the body fluids from the organs of digestion or absorption to each individual cell; then waste materials are dissolved from the cells and carried away to the organs of excretion.

Circulating body fluids also carry in water solution hormones, the so-called "chemical messengers," that are produced by the ductless glands, such as the pituitary, thyroid, adrenals, sex glands, and others. Hormones often do their work at locations in the body far away from the glands where they are produced. In fact, hormones are only slightly less important than the nervous system in effecting necessary co-ordination of functions within the animal body, and they accomplish this co-ordinating task by traveling through the body in aqueous solution.

Water, in the circulating fluids of living things, not only transports materials for the complex chemical reactions fundamental to life, but also makes these very reactions possible by providing the necessary aqueous environment. As students learn early in high school chemistry, common chemical reactions usually will not proceed while the reagents are in the dry state. Witness baking powder, which is stable so long as dry, but which erupts into violent reactions as soon as it is moistened. A biological example is the seed, which remains dormant while it is dry, even if all other conditions are optimal for sprouting; but once water is supplied, seeds spring into active life.

Hot and Cold

Water is the ultimate agent that enables man and other mammals to maintain a uniform internal temperature; and this man must do or he perishes. Ordinarily, the human body temperature has an extreme diurnal fluctuation of but two degrees Fahrenheit, regardless of whether the environment is hot, cold, or temperate. If man, like fishes, amphibians, and reptiles matched his internal temperature to ambient temperatures, he probably would not have achieved his present highly developed civilization, which has been gained by steady year-round mental and physical activity regardless of the season of the year or location upon the earth; for animals with variable internal temperatures become sluggish or totally dormant when exposed to cold.

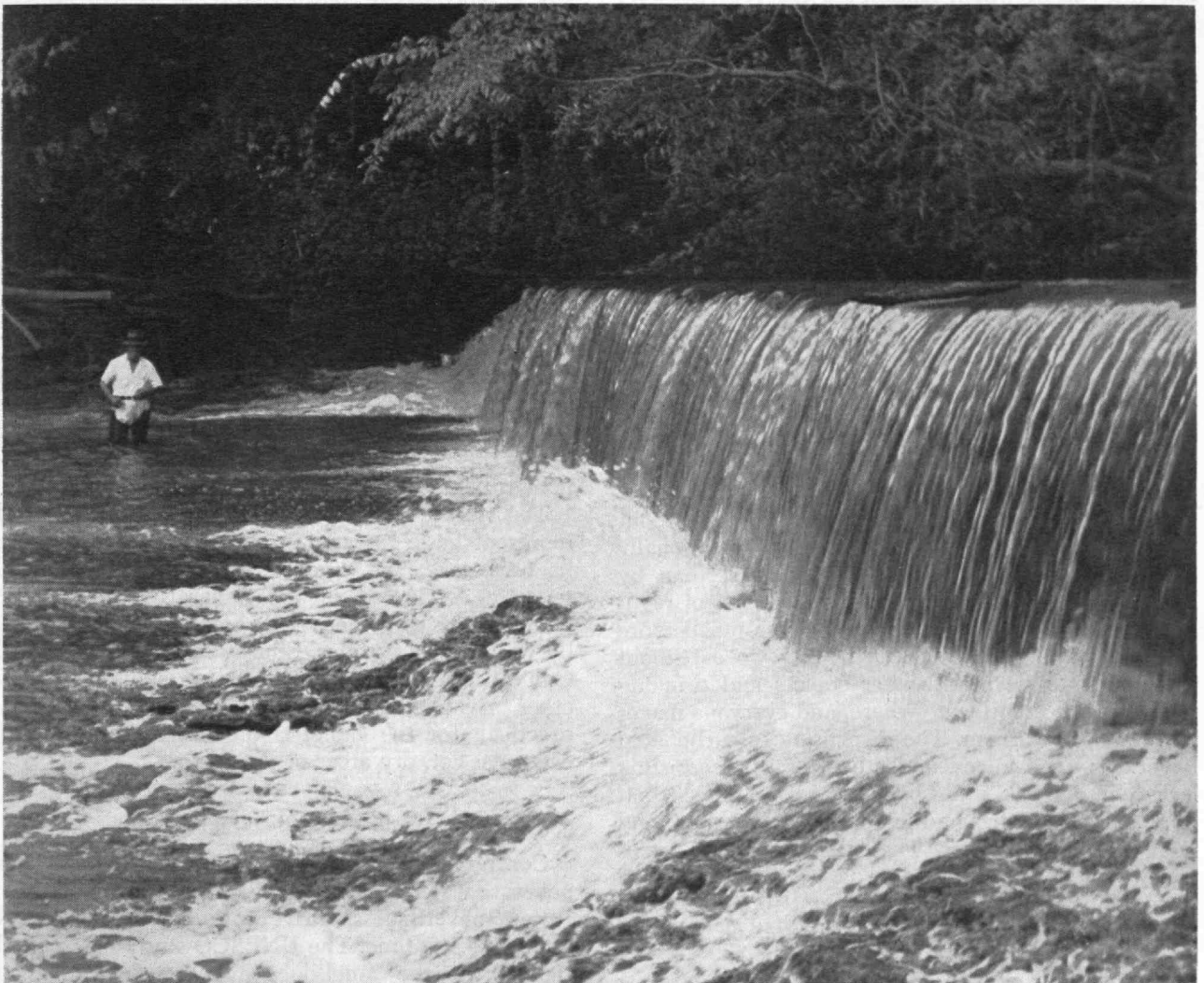
Heat within the body is generated by the cellular oxidation of food substances and by muscular activity. It is dissipated from the surfaces of the body and respiratory passages, in part by radiation and convection but mainly through the evaporation of water. For each thousand kilogram calories disposed of by this latter method, the body must evaporate nearly two quarts of water. Evaporation of moisture in the breathing passages disposes of about one-tenth of the human body's surplus heat. Most of the remainder

is taken care of, in the human being, by evaporation of sweat from the skin, and, in furry animals — (like the dog) that do not have sweat glands in the skin — by evaporation of moisture from the tongue and respiratory passages. The dog facilitates this cooling process by "hyperventilation," that is, by panting, to increase the flow of air through the mouth, across the tongue, and through the respiratory passages.

Thus water gets the credit for keeping the mammalian body cool enough internally; and this is the main problem in maintenance of uniform temperature. Other body mechanics, that need not be elaborated upon here, are charged with the simpler task of making sure that internal temperatures do not fall too low. Water, within the bodies of lower forms of life that do not enjoy the automatic temperature regulating mechanisms of the human body, also serves a sort of temperature stabilizing function, for water can absorb more heat with less change in temperature than almost any other known substance.

Good Taste

A function of water that has much hedonistic significance and perhaps some physiological value is its role in the tastes of foods. Only substances soluble in water can be tasted. Here we are talking of *taste*



Hot Weather Antidote

Albert E. Graf

in the true and fundamental sense, comprising only the sensations of sweet, sour, salty, and bitter. Many flavors, for example vanilla, are really odors; and a substance need not be water soluble to produce this sort of flavor sensation. But true tastes come to the human being only in water solution; for example, sour tastes from hydrogen ions; salty tastes from salts of low molecular weight; bitter tastes from salts of high molecular weight; sweet tastes from substances as dissimilar chemically as sugar and saccharin.

Private Ponds

Evolutionists hold in general that terrestrial forms of life evolved from forms dwelling in the ocean. Confirmation of this idea comes from the fact that the body fluids of the higher animals, including man, contain the same inorganic substances, in the same proportions, as does sea water. In fact, the higher animals have never escaped completely from an aqueous environment. Amphibians, one evolutionary notch above the fishes, spend part of their time on land; but their eggs usually are laid and their young hatched and nurtured in water. Turtles, which many believe another step higher on the evolutionary ladder, lay eggs on land. But the interior of turtle eggs provides a watery environment for the embryo, much like the one in which amphibian embryos develop.

Considering now the most highly evolved animals, the mammals including man himself, we learn that amniotic fluid in the mammalian uterus provides a watery environment quite similar to that enjoyed by embryos of the lower vertebrates. Apparently such an environment is ideal for the critical period of embryonic development. Thus perhaps we may say that when marine animals invaded land, probably in the Cambrian period of geological time nearly 500,000,000 years ago, they brought along with them private ponds in which their young might develop.

How Dry I Am

The basic needs of the human body, in order of exigency, are air, water, and food. Suffocate a man, and he perishes quickly. He can survive for long periods of time without food, often 30 days or more, living off his body reserves. He cannot go without water for nearly so long. Castaways traditionally have been troubled much more by thirst than by hunger. Even in the minute-to-minute terms of regular everyday existence, we need water much more often than we need food. Ordinarily we eat about three times a day; but water coolers and drinking fountains are found everywhere, and everyone makes frequent use of them. The dispensing of carbonated beverages, fruit juices, and other drinks — consisting largely of water — is big business; so big indeed that in recent times it has had to be turned over more and more to slot machines. The human stomach keeps pace with these relative needs; it passes imbibed water along to the intestines in about 10 minutes, but takes four or five hours to empty itself of the food of a meal.

The dog resembles man in the relative urgency of its needs for food and water; but quite the reverse

is true of some of the smaller mammals. The common laboratory rat, for example, survives about 13 days with food and no water, but only about eight and a half days with water and no food.

Another rodent, the kangaroo rat of the Arizona deserts, does entirely without water. This engaging looking little beast resembles a miniature kangaroo, and jumps just like a kangaroo. It has large appealing eyes — evidence of its nocturnal habits. This rodent eats dry seeds and other dry plant materials, and never drinks water; in fact, no water is found in the deserts it inhabits.

The seeds this creature consumes give it a bit of water; about 5 per cent of this food is moisture (many human foods, in contrast, contain 90 per cent water and more). Also, the internal metabolism of the beast, like that of all mammals, yields some water; the kangaroo rat generates internally 0.6 gram of water from each liter of oxygen metabolized. This minuscule amount of water would never keep the rat alive, did not the animal have special means for preventing loss of water from its body. Sweating is minimized because the rats stay in their cool burrows during the scorching desert days. These same underground burrows also help the rats minimize the water loss from their respiratory tracts; the relative humidity in their burrows is usually some 50 per cent, whereas outdoors the Arizona desert air has relative humidities of less than 15 per cent.

The kangaroo rats lose very little water in their excrement. From each 100 grams of seeds eaten, they produce about five grams of feces, containing less than two and a half grams of water. These animals also excrete a remarkably concentrated urine. The most concentrated human urine contains some 2.2 per cent electrolytes and 6 per cent urea; but kangaroo rat urine contains about 7 per cent electrolytes and 23 per cent urea. If man could perform this extraordinary physiological feat, he could thrive while drinking sea water (as the kangaroo rat has been shown experimentally to be capable of doing), and human castaways upon the ocean would not need to suffer the ordeals of water deprivation they now sometimes undergo. More will be said presently about the question of imbibition of sea water by human beings.

The studies of the kangaroo rat just summarized represent basic research — pursuit of knowledge for its own sake. But similar research on the camel, recently conducted in the Sahara Desert (where temperatures sometimes go as high as 140 degrees F.) by the United Nations Educational, Scientific, and Cultural Organization, with joint sponsorship by other private and governmental agencies, was highly practical; for the camel is the beast of burden of extensive hot, dry areas of the earth.

Ships of the Desert

Contrary to popularly held ideas, the camel does not store water in its hump or in its several stomachs. It can, nevertheless, thrive without water to drink for weeks at a time. The UNESCO study being cited showed that the camel does this by means similar to

(Continued on page 422)

America's Many Battles with Cholera

The conquest of cholera in the United States is mainly, although not entirely, a triumph of sanitary engineering

by JAMES A. TOBEY

ONCE upon a time cholera was a word to conjure with in this country. Now, however, it is one of a substantial number of potent maladies that have completely or almost completely disappeared from the American scene. Among the other serious and lethal diseases which once were rife in the United States but now may be classed as obsolete here, if not elsewhere, are smallpox, yellow fever, and bubonic plague. Those which are now so rare as to be regarded as obsolescent in this country include typhoid fever, typhus fever, hookworm disease, trachoma, malaria, diphtheria, goiter, and pellagra; these last two are dietary deficiency states and not communicable diseases like all the others listed. At one time or another, all of these maladies have been rampant in North America.

Although the name cholera is virtually unknown to the last two generations of Americans (and has been more or less forgotten by the others), this disease has been characterized as America's greatest scourge. In the course of a little more than half a century, from 1832 to 1892, it swept across the nation in half a dozen tremendous epidemics, creating havoc everywhere and taking a high toll of valuable lives. Actually, these waves of cholera epidemics were no worse than the smallpox outbreaks and the visitations of the terrible "throat distemper," or diphtheria, in colonial days in America, or the ravages of yellow fever in the middle of the Nineteenth Century which took even more victims, but were no more terrifying, than the "Indian pestilence."*

Cholera was aptly known as the "Indian pestilence," or Cholera Indica, or more commonly as the Asiatic cholera, because it came out of the East, particularly from India, where it had flourished for centuries and is still highly prevalent. The great antiquity of the disease is indicated by references to it in the most venerable of Sanskrit documents, and also by an accurate description of it written by a Portuguese physician in Goa, one Garcia del Huerto, in 1563. The malady was, however, unknown in Europe until the beginning of the Nineteenth Century, when India was opened up to trade with the West.

Asiatic cholera itself is a disease of sudden onset and rapid action, with violent purging, the so-called "rice water" stools, vomiting, cramps, and collapse, with death ensuing often in from six to 48 hours. The

mortality is relatively high, averaging about 10 per cent of the cases, but sometimes going as high as 50 per cent. The terms "cholera infantum" and "cholera morbus," which were in vogue a few generations ago, were applied to other diarrheal conditions and not to true cholera, while the ailment of swine known as hog cholera is something else again and, like chicken cholera, has no connection with human cases.

The First Great Epidemic

In 1817 the Asiatic cholera, which was raging in Jessore in India, broke out of its bounds and was carried by ships to Malay, to China and Persia, and finally to Russia, where it flourished among the susceptible peasants for a decade. From there it spread to Poland and then on to Germany, France, and England, where the disease caused disastrous epidemics in 1831 and 1832. In 1831 there was also a tremendous epidemic of cholera among the Mohammedan pilgrims to Mecca, where it is said that 20,000 out of some 50,000 of the devout hadji perished from the disease. Until very recent times these Meccan pilgrimages always have been fertile sources of infection.

The great pandemic of 1832 was not long in reaching the Americas, for this was the period when clipper ships and packets were constantly making the long voyage of from 36 to 60 days across the stormy Atlantic, bringing immigrants from Ireland, Germany, and other parts of Europe to the promised land. Too many, unfortunately, never arrived. On each of these ships 150 to 200 passengers would be crammed into the fetid, stinking holds where the sanitary arrangements were primitive, and conditions were favorable for the rapid spread of disease. In this year, four ships bound for Quebec lost 101 of 700 passengers from cholera en route.

The *Carrick*, a brig from Dublin, is blamed, however, for the introduction of the Indian pestilence into the Americas. After burying, at sea, 42 of its original 145 passengers who had succumbed to cholera, this ship arrived at Grosse Isle below Quebec on June 3, 1832. The survivors, many of them sick, were transferred to a small, overcrowded river steamer, the *Voyageur*, for the trip to Quebec, where they arrived on June 8. On the way, a feather bed upon which a cholera patient had died was cast overboard, floated ashore, and was salvaged by a settler, who promptly came down with cholera and died of it.

By the middle of June, the city of Quebec was in the throes of a full-blown epidemic of the Asiatic

* James A. Tobey, "Yellow Fever's Role in History," *The Technology Review*, 56:145 (January, 1954); "When Smallpox Flourished in America," 58:97 (December, 1956).

cholera, with some 500 cases a day. Before this panic-causing outbreak had subsided, it had been responsible for 2,218 deaths here, and about half as many in Montreal. From Canada the disease traveled along the newly opened Erie Canal to Albany, and then down the Hudson to New York City, although some authorities thought that it had already entered by the port there. At any rate, cholera caused about 3,500 deaths in New York City. At Sing Sing Prison, up the river, 175 out of 1,000 inmates were infected, and 73 (a high percentage) died. The disease then went on to Philadelphia and Baltimore, and from there to the entire Interior Valley of the country. It coursed down the Mississippi, with fatal stops at Vicksburg and Natchez, to New Orleans, where an epidemic of yellow fever also was raging. In this city more than 6,000 persons are reported to have lost their lives. The epidemic crossed the Caribbean to Havana, killing a reported 15,000 there, and was likewise rampant in Mexico. All in all, it was a most devastating episode.

Troops moving from the East to Illinois to participate in the war against the Indian chief, Black Hawk, carried the infection to Ohio, Illinois, and Michigan. Of 200 soldiers who started out under General Winfield Scott, 62 — including two medical officers — died of cholera on the way, 51 were sick on arrival at Fort Dearborn, and only about 80 were fit for duty. Among the participants in this Black Hawk war was a young captain of Illinois volunteers named Abraham Lincoln, who saw no action and afterwards wrote that all he learned in this campaign was to look after the health of his men. Many years later, in his second inaugural address, President Lincoln made the much-quoted remark that, "We can not escape from history," an adage which certainly applies to the history of epidemics in this country.

At this time no one regarded cholera as a contagious disease, but as one caused by effluvia and noxious vapors. In order to dispel these miasms and purify the air, artillery was fired at sunrise, and bonfires of tar and pitch belched black smoke during the day. The doctors treated their cases with hearty doses of calomel and opium, profusely bled their dehydrated and anemic patients, and advised against the consumption of such laxative foods as gooseberries, apples, pears, green corn, cucumbers, and whortleberries. The most eminent physician in Cincinnati, Dr. Daniel Drake, declared that the cholera was due to damp air and was fostered by individual excitement. He assured the public that the pestilential cloud would soon pass away and urged them to be calm. Despite this assurance, the epidemic continued, as no one thought to advocate the boiling of the drinking water.

Another curious remedy of the times was the Cholera belt, a flannel binder which was placed around the abdomen and was supposed to ward off the disease. These cummerbunds were so highly regarded that they were standard equipment for soldiers almost up to the time of World War I.

After ravaging the entire country and using up its quota of susceptibles, the cholera epidemic of 1832 finally subsided, except for sporadic cases. In 1849 after a terrible epidemic of the disease in Calcutta and other parts of India, it returned to the United

States, brought by some or many of the swarm of 300,000 immigrants who flowed into the Americas that year. Like the earlier outbreak, this epidemic swept over the country; it followed the Gold Rush to California, bothered the Mormons on their hegira to the West, and among numerous other famous victims, caused the death of Robert S. Todd, father of Mary Todd Lincoln. On the whole, the carnage was about as great as it had been 16 years earlier.

Dr. Snow and the Broad Street Pump

Our third great visitation of cholera occurred in 1852 and 1853, and was imported as usual from the East via Europe. In the latter year, 28 ships bound for New York buried at sea 1,141 victims of cholera, but brought in many sick to spread the seeds of the infection. This was also the year which marked the beginning of the Crimean War, in which more than twice as many of the troops died of cholera and other diseases as were killed in battle, including the Charge of the Light Brigade. This war was, however, notable for the sanitary advances instituted by Florence Nightingale — the "Lady With a Lamp" — who was the founder of modern nursing.

When cholera was raging in London at this time, an inquisitive physician and sanitarian, named John Snow, observed that the death rate from the disease was unduly high in one particular parish, that of St. James. By a brilliant piece of sanitary detective work, a landmark in the history of epidemiology, he demonstrated that an unusual number of cases occurred among persons who imbibed of the well water from the popular Broad Street pump. He then established the fact that sewage from an adjacent house (where a case of cholera had been reported) was finding its way directly into this well. Those who consumed this water, including individuals who came long distances to get it, became sick, while those who drank waters from other less-favored wells remained healthy. Thus, it was proven that cholera was indeed a communicable disease and that it was spread by polluted water, among other ways.

This noteworthy demonstration knocked the miasmatic theory of cholera into a cocked hat and showed that proper sanitation could prevent what had formerly been considered to be an unpreventable disease. This startling idea was put into practice in Germany by an able young physician named Max Joseph Von Pettenkofer, who proceeded to reduce cholera in his native Hamburg by sanitary means.

Despite this new knowledge, cholera returned to America in full force in 1866. Of 8,500 passengers and crews arriving by ship in New York Harbor in that year, 872 died of cholera. In the city itself, there were about 1,200 deaths from this cause, with another 800 or so in the separate city of Brooklyn. This epidemic, like all the others, spread throughout the country, causing an estimated 50,000 to 60,000 deaths, although no one knows precisely how many in those days of meager vital statistics. During the Civil War which had just ended, disease had accounted for about two and a half times as many deaths among the troops as had bullets.

(Concluded on page 416)

BUSINESS IN MOTION

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One such progressive manufacturer, in reviewing the materials and processes used in making their spherical roller bearing cages, sought the opinion of others. One of those "others" was Revere's Technical Advisory Service, which was called in to review the kind of brass that was being used in the cages and to study the problem first-hand. This meant consulting with the engineering department as well as observing the manner in which the bearing cages were being produced.

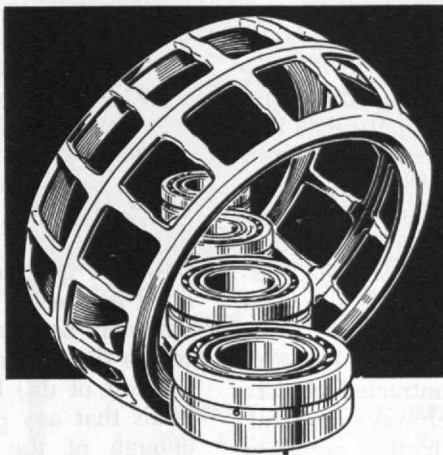
After a careful study recommendations were made. The result was the adoption of specification changes in the brass strip used which, in addition to improving the quality of their roller bearing cages, gave this manufacturer the following money-saving advantages: One bore pressing operation has been eliminated. Machining is more easily accomplished. Less machining is required. Tool life has been increased with some speeds increased up to 100% and feeds up to 30%.

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BATTLES WITH CHOLERA

(Concluded from page 414)

The next great epidemic of cholera hit the United States in 1873, coming from Central Asia by way of Russia and Europe. In Hungary alone, there were said to have been half a million cases, although these figures probably are exaggerated. This outbreak began here in New Orleans and promptly traveled up Old Man River to the entire Interior Valley. The epidemic was worse in the small towns and rural communities than in the larger cities — some of which were beginning to get decent water supplies. In Tennessee, one of those stricken was ex-President Andrew Johnson, but he recovered. In this year Dr. William Budd in England issued a brilliant report on typhoid fever, showing that it, like cholera, was a water-borne disease.

The Cholera Germ

During this era, a chemist in France — Louis Pasteur — had been demonstrating that many human diseases are caused by specific micro-organisms, and that methods of immunity could be developed against them. His earliest work in this field was concerned with anthrax and rabies. This founding of the germ theory of disease from 1865 to 1875 led to the discovery, during the 1870's, of the causative organisms of a number of diseases, but it was not until 1884 that the cholera germ was found. A severe outbreak of this malady in and around Cairo in 1883 had brought a mission from Pasteur's laboratory in Paris; and Pasteur's great rival in the new science of bacteriology, Dr. Robert Koch of Germany, who had discovered the bacillus of tuberculosis in 1882, also went to Cairo to study the disease.

This investigation cost the life of one of Pasteur's valued associates, Thullier, who contracted cholera in Alexandria and died of it. Dr. Koch was successful, finding in cholera patients a distinctive organism which came to be known as the "comma bacillus" because of its peculiar shape. Actually the organism was not a bacillus at all, but a rod-like organism called a spirillum, and now scientifically known as the *vibrio cholerae*. A few years later, in 1893, Dr. Waldemar M. W. Haffkine in India prepared a vaccine from it, which has since been improved. In World War II this vaccine was given to all American soldiers who were sent to cholera-infested localities. None got the disease.

The epidemic of 1884 ravaged Europe for several years. It produced some 17,000 cases in Hamburg alone, and eventually reached the United States in 1892, coming in through New York. By now, however, the public health officers knew how to cope with cholera, and this outbreak was pretty well nipped in the bud. It was the last substantial epidemic of cholera in this country, although cases were reported as late as 1911, in Brooklyn and elsewhere.

Although cholera has been absent from the American scene for nearly half a century, it is rampant in many other parts of the world, particularly in Asia. From 1945 to 1949 cholera caused more than 800,000 deaths in India and Pakistan alone, but in the next

five years caused less than half as many deaths. The record is still bad, but there is progress. After World War II, a severe epidemic of cholera broke out in Cairo in 1947 but with help from outside was brought under control.

The conquest of cholera and of other water-borne diseases in this country is mainly, but not exclusively, a triumph of sanitary engineering. Since 1886, when the late Professor William T. Sedgwick of M.I.T. began his studies on water and sewage at the Lawrence Scientific Station in Massachusetts, our engineers have developed, installed, and maintained effective methods for pure and potable water supplies, and for the safe disposal of sewage and other human wastes. Through these and other aspects of environmental sanitation, the knell was sounded for cholera, typhoid fever, dysentery, and many other dangerous communicable diseases.

TECHNOLOGY IN A FREE SOCIETY

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tionalization will have no trouble justifying encroachments on the liberties of its own people.

This alleged conflict between property and human rights also leads to the assumption that the government ought to supervise the distribution of the national income in order to remedy inequities. Admittedly public authority must be used to protect the weak, to give some security against the unavoidable hazards of an industrial economy, and to provide equality of opportunity. This is not the same thing as the philosophy of consciously adjusting the tax structure, giving subsidies to special groups, controlling prices and wages, and in general using the power of government to arrive at some vaguely defined notion of "social justice." (Some of the vagueness may be intentional; if the social planners know where they are going, they prefer not to reveal it to the rest of us.) In its simplest form this philosophy holds that any problem can be solved by spending enough of the taxpayers' money. If one billion doesn't work, try two — or better still, ten.

It is not a new idea; the Roman Empire had its bread and circuses. Nothing in history suggests that a healthy society can exist if people are conditioned to take it for granted that the government will settle all their problems for them. In the end — as happened in Imperial Rome — the productive members of society are bled white to support the unproductive, and economic and technical progress die of suffocation beneath the tax burden.

History is littered with the wreckage of "share-the-wealth" schemes, all overlooking the vital point that if the incentive to produce is destroyed, there is not going to be any wealth to share. This incentive has always been best provided by freedom of enterprise — by capitalism, a word that we have quite needlessly allowed ourselves to become ashamed of.

American capitalism, furthermore, has worked out its own rather effective share-the-wealth system. The most distinctive and the greatest American contribution to technology has been mass production. It is more than just a technological achievement; mass production rests on one concept which seems ele-

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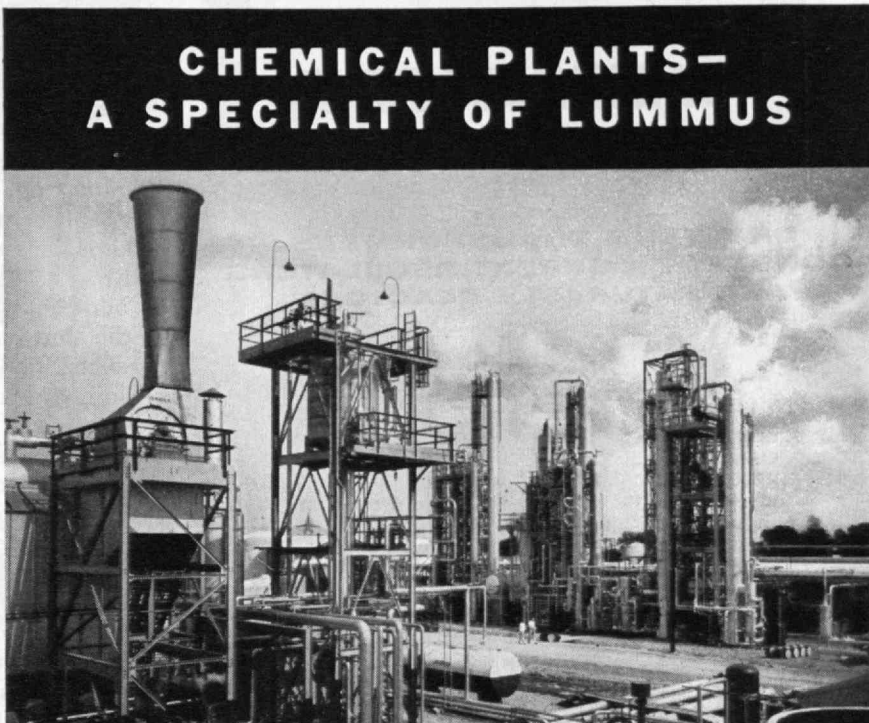
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Phthalic Anhydride	Pittsburgh Coke & Chemical Co.	Neville Island, Pa.
Epon Resins	Shell Chemical Corp.	Houston, Texas
Bisphenol	Shell Chemical Corp.	Houston, Texas
Tetramer, Cumene, Phenol-Acetone	Societe des Chimiques des Derives du Petrole	Antwerp, Belgium
Sulfuric Acid	Inland Chemicals Canada Ltd.	Fort Saskatchewan, Alberta, Canada
Ethylene Oxide-Glycol	Calcasieu Chemical Corp.	Lake Charles, La.
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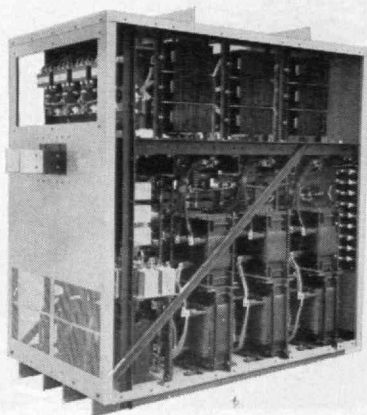
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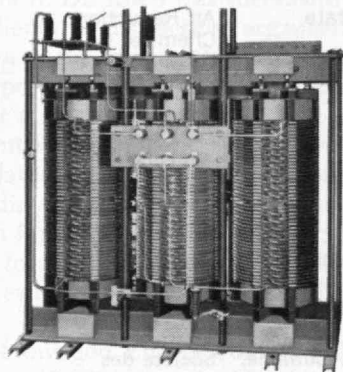
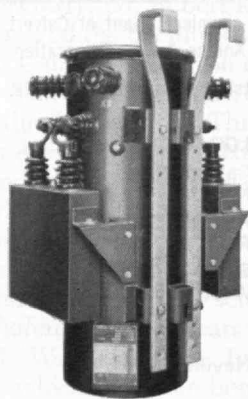
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TECHNOLOGY IN A FREE SOCIETY

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mentary, but which no one else had thought of before — namely, that producers are also consumers, and that the benefits of technological progress should be passed along to them in the form of higher incomes and lower prices. The concept has not been perfectly developed, but it still remains indisputable that in the U. S. (to a far greater extent than anywhere else) such things as automobiles, refrigerators, television sets, and nylon stockings have become utilities for the many rather than luxuries for the few.

This is all to the credit of our economic system, but let us remember that this system is neither self-operating nor self-perpetuating. It will last only as long as it continues to function in such a way as to make it demonstrably superior to any possible alternative. The one thing we cannot afford to do is sit on our past performances. We must be continually on the alert for better ways of doing things, for new products, for improved techniques.

More is needed, however, than scientific and technical skill. The full nature of the task was effectively stated recently by Alfred P. Sloan, Jr., '95:

"Industrial management," he said, "realizes today as never before that, however competent it may be, it can no longer confine itself directly to the production of goods and services. It must accept responsibility for the impact of its decisions, at the policy level, upon society as a whole since these decisions affect the economic progress of the community and its stability. In other words, it must accept its share of responsibility for human progress and make its decisions in terms of industrial statesmanship."

This is a responsibility to which we will have to bring all the wisdom and judgment we can muster, as well as a clear understanding of the kind of society that we are trying to maintain. We will also have to have faith in the inherent strength of a free society, to realize that with all its vexations and its apparent inefficiency, it still comes out best in both moral values and material well-being. There are no short cuts to Utopia — if indeed there is even any Utopia. The avenues which seem to lead there are like the roads that seemed to go around the Hill Difficulty in *Pilgrim's Progress* — they terminate in danger and destruction. It is one of the tragic ironies of our time that the social philosophy which was supposed to bring paradise to the masses has resulted instead in conditions as in the book *1984*; a despotism more terrible than any of its predecessors because it is completely without moral restraint and because it can use the power of technology to engage in the most ruthless oppression the world has ever seen.

The betterment of humanity has not come, and will not come, through ready-made, attractively gift-wrapped panaceas; it has to come from effort and striving. The great gift of the free society is the opportunity to govern our own lives, to make the most of whatever talents God has given us, and to find the satisfactions of work and achievement. If we want to keep this freedom, then when we come to the Hill Difficulty, we must be prepared, like Bunyan's hero, to face it and climb up.



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TREND OF AFFAIRS

(Continued from page 404)

Visiting Committee Report on Chemical Engineering

■ The Visiting Committee on the Department of Chemical Engineering* met on Sunday, March 2, for the entire day. The Committee reviewed the undergraduate and graduate programs, discussed the status of the practice schools, reviewed the program of the Nuclear Engineering Division, and offers the following conclusions and recommendations:

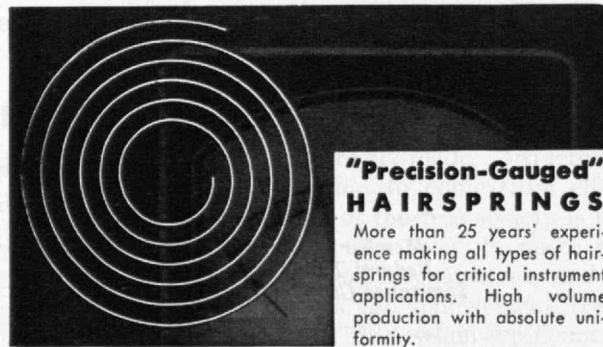
The Committee endorses with enthusiasm the guided pattern of elective freedom introduced by the Department into its undergraduate program. We recognize that the additional student counseling required by this program imposes added burdens on the staff, but we believe that the results will justify the extra effort.

Professor Walter G. Whitman, '17, Head of the Department, reported on an informal three-day meeting he had held with seven leading chemical engineering educators from other schools. As a result of this meeting there seems little doubt that M.I.T. has maintained its leading position in chemical engineering education, both at the graduate and undergraduate levels. There is, however, some question as to whether the Department is supplying *professional* leadership to the extent expected of an institution of M.I.T.'s general stature. The Committee believes that both facets of the Department's activities are important. We are gratified to note the continued high performance of the Department in meeting its educational responsibilities. We feel, however, that greater emphasis should be given to increasing the research activities of the staff with a view to the publication of basic research in the Department's field of interest. In this way the Department would better fulfill its obligation to maintain its professional, as well as its academic, leadership.

In our review of Nuclear Engineering we note that the M.I.T. reactor is nearly ready for operation. The staff has estimated that the operating cost of the reactor on a three-shift basis would be about \$250,000

(Concluded on page 422)

*Members of this Committee for 1957-1958 are: Crawford H. Greenewalt, '22, chairman, Fred C. Koch, '22, Clarence L. A. Wynd, '27, Joseph K. Roberts, '28, Lombard Squires, '31, Jerry McAfee, '40, Ward M. Canaday, Clark E. Center, and George F. Getty, 2d.



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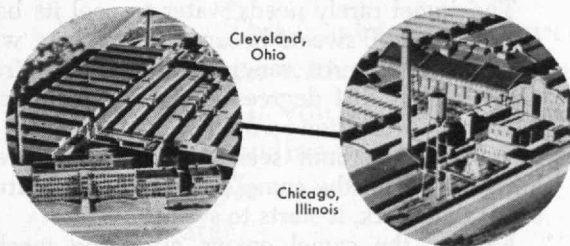
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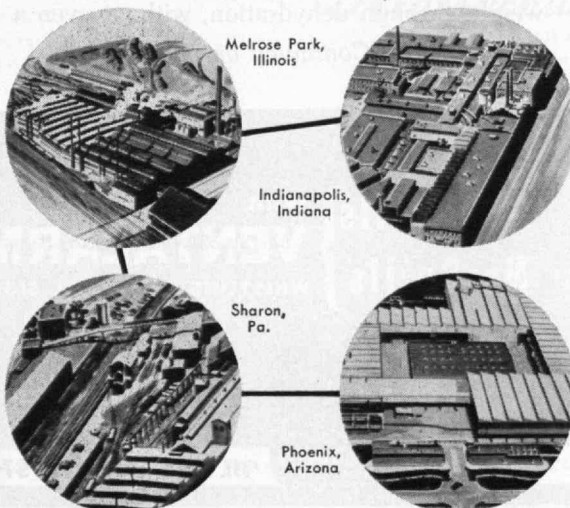
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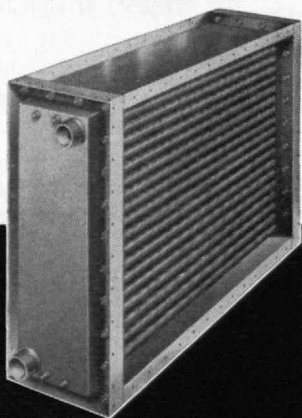


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TREND OF AFFAIRS (Concluded from page 420)

a year. Some support for sponsored research has been promised which might meet one-third to one-fourth of the annual operating cost. The Department seemed concerned with the resulting deficit and was disposed to embark on a promotional campaign which would produce the financial support necessary to defray full operating costs as rapidly as possible.

It is the view of the Visiting Committee that within a very few years there will be an oversupply of worth-while sponsored research for the reactor. We believe that it would be unfortunate if, solely to defray operating expenses, projects were undertaken which were not of the highest scientific merit. We would urge that high standards be set for the work to be done with the reactor and that the M.I.T. Administration be prepared to underwrite deficits in reactor operation until such time as a sufficient number of projects meeting these standards are developed.

PRECIOUS COMMONPLACE (Continued from page 412)

some of those employed by the kangaroo rat, plus other mechanisms. Camels lose little water in their excreta. Camel dung is so dry it is used as fuel by the desert nomads; and mature camels weighing over 500 pounds excrete less than a pint of urine a day, even when drinking all the water they want.

The camel rarely needs water to cool its body by evaporation of sweat, because it prospers with internal temperatures ranging all the way from 93 degrees F. to 104 degrees F. Such an internal temperature fluctuation would prostrate most other mammals. The limit seems to be 104 degrees F., however; when the camel's internal temperature exceeds that mark, it starts to sweat.

Finally, the camel enjoys a unique mechanism whereby it can endure a remarkable degree of dehydration without harm. A man deprived of water until he has lost 10 per cent of his body weight is helpless mentally and physically; a 20 per cent loss is usually fatal. Camels can lose 30 per cent of body weight through dehydration, without even a loss in

(Continued on page 424)

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(Continued from page 422)

vigor. The secret is this; when most mammals are denied water, all of their tissues dry out at about the same rate, but it is dehydration of the blood that first causes disability, then death. But in the camel the normal water content of the blood is maintained, even when the other tissues are markedly dried out.

In the UNESCO camel study, one animal did without water for 17 days, and lost 200 of its original 660 pounds, without any loss in strength and vigor. Then when it was given water, it drank 16 gallons in 10 minutes!

Bottoms Up

Dogs and burros, even when quite dehydrated, usually drink enough water at one filling to replace the deficit. The human being does not do this; usually the drinking of about half of his requirement lends a transient feeling of satiety to a thirsty man; and then, after food and rest, he quaffs enough more to restore to normal the water level in his tissues.

This raises the question: What is thirst? A facile answer would be: a dry mouth. But this answer is inadequate. The drug atropine makes the mouth feel dry without creating a desire for water. The drug pilocarpine produces a profuse flow of saliva in any person's mouth, but does not satisfy the water hunger of dehydrated persons. A man may suddenly become thirsty upon eating a salty anchovy, even though his mouth remains moist. In short, thirst cannot be defined objectively. But this impossibility of definition is no obstacle to either discussion or investigation of the phenomenon, for, in the common cliché, "everybody knows" what thirst means.

Thirst becomes especially meaningful in hot weather, and develops poignant meaning for the man lost on the desert or cast away at sea. It is much pleasanter to starve to death than to die by thirst. Starvation does involve hunger pangs, but otherwise results in a general weakening, apathy, and perhaps final death from an intercurrent infection such as

(Concluded on page 426)

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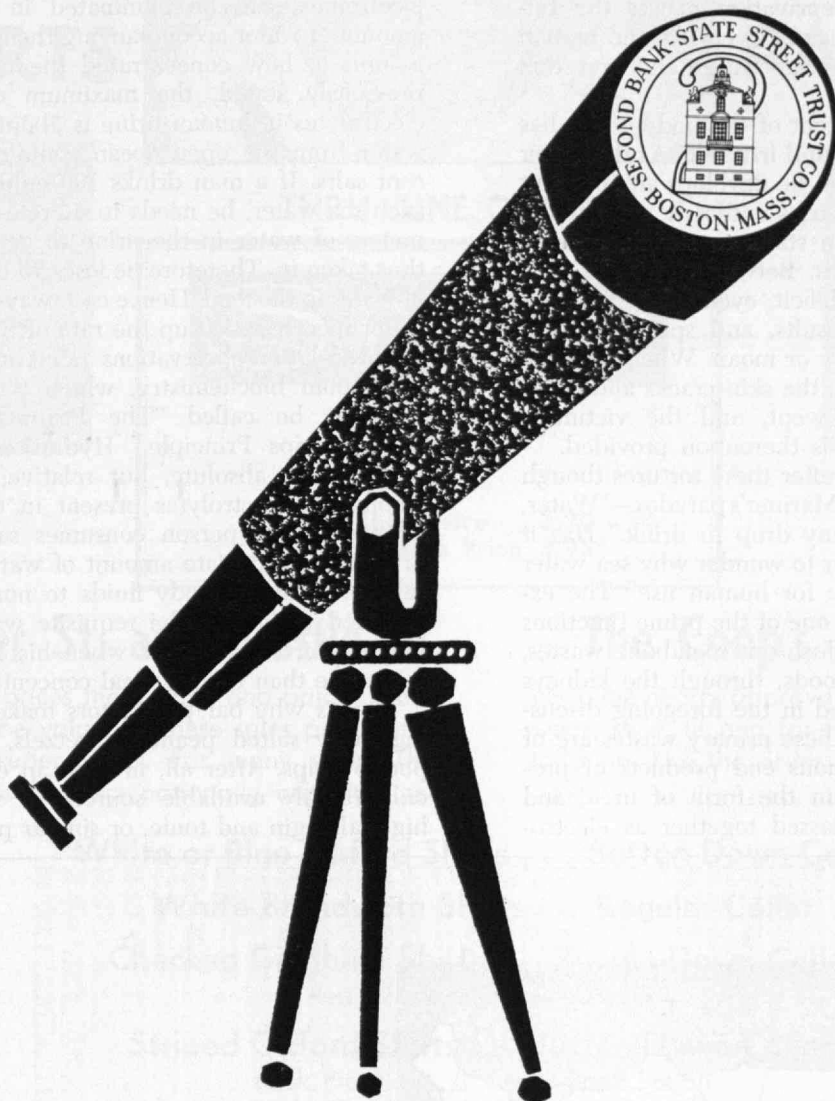
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PRECIOUS COMMONPLACE

(Concluded from page 424)

pneumonia. But water deprivation causes the following horrendous sequence of events in the human being, as loss of water by evaporation and excretion continue apace.

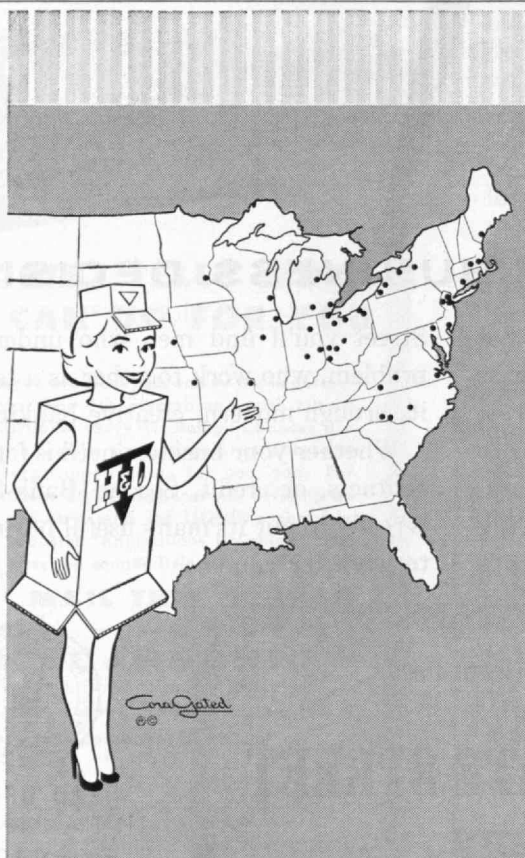
When some 3 to 5 per cent of the body water has been lost, a man is thirsty and irritable. As the water loss approaches 10 per cent, he develops an apparent lump in his throat that he tries endlessly and futilely to swallow, his facial skin starts to shrink, and he may develop hallucinations. Between a 10 per cent and a 20 per cent water deficit, eyelids stiffen and a blank unblinking stare results, and speech is supplanted by a hoarse bellow or moan. When a 20 per cent water loss is suffered, the skin cracks and oozes blood, bloody tears are wept, and the victim is doomed — even if water is thereupon provided.

Castaways at sea may suffer these tortures though surrounded by the Ancient Mariner's paradox — "Water, water, everywhere, Nor any drop to drink." Has it ever occurred to the reader to wonder why sea water is not a suitable beverage for human use? The explanation revolves around one of the prime functions of water in the body; to flush out metabolic wastes, useless end products of foods, through the kidneys into the urine. As indicated in the foregoing discussion of the kangaroo rat, these urinary wastes are of two broad types; nitrogenous end products of protein metabolism, largely in the form of urea, and various inorganic salts, classed together as electro-

lytes. Unless these substances are eliminated at an appropriate rate, the animal comes to grief. And every species has a limiting rate at which urea and electrolytes can be eliminated in relation to the amount of water accompanying them; in other words, a limit to how concentrated the urine can be. As previously stated, the maximum concentration of electrolytes in human urine is about 2 per cent. Sea water from the open ocean contains about 3.5 per cent salts. If a man drinks 100 cubic centimeters of such sea water, he needs to excrete 175 cubic centimeters of water in the urine to get rid of the salts thus taken in. Therefore he loses 75 cubic centimeters of water in the deal. Hence castaways who imbibe sea water merely speed up the rate of their dehydration.

These latter observations point up a principle of a barroom biochemistry, which the present writer proposes be called "The Peanuts, Pretzels, and Potato Chips Principle." Hydration of the human body is not absolute, but relative; relative to the amount of electrolytes present in the body at the moment. As a person consumes salt, he needs to drink an appropriate amount of water to reduce the salts level of his body fluids to normal. And he is impelled to imbibe the requisite water by a sensation of thirst that arises when his body fluids contain more than their normal concentration of salts.

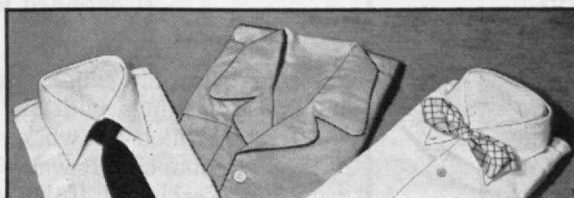
That is why bar proprietors make money by giving away salted peanuts, pretzels, and well-salted potato chips. After all, in such an environment, the only readily available sources of water are beer, highballs, gin and tonic, or similar potables.



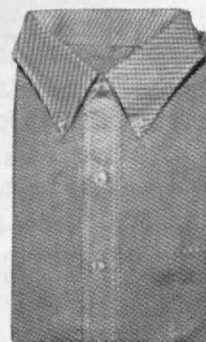
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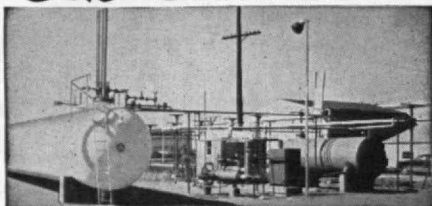
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OUR ATOMIC POLICY

(Continued from page 407)

I most definitely do not intend to draw from this experience any conclusion about the wisdom of political meetings with the Russians. Remember, the area in which we worked at Geneva was a strictly professional one. It was vital that political considerations be excluded. If they got injected, the conference would be ruined.

However, my experiences before and during the Geneva Conference and my contacts since with people from foreign lands convince me that in able men everywhere there are powerful forces for understanding and co-operation. These forces are latent. They can be brought into play only if men are allowed to have contact with each other, to learn to know each other as human beings and to develop mutual respect. Perhaps the ultimate greatest value of the International Geophysical Year may be as a catalyst for promoting personal contacts and understanding between peoples from all over the world. There are other international activities in which mutual trust and good will can be fostered. I have seen enough of the International Radiation Committee, set up by the United Nations in 1956, to know that the people involved in that international activity are operating professionally, co-operatively, and with trust in each other. The new International Atomic Energy Agency, set up in Vienna last September, provides another really hopeful sign and further opportunity for such contacts. It is most heartening that the Soviets, as well as the United States, have relaxed their restrictions during the past three years to permit a considerably greater intermixing of their citizens and ours.

Reorientation of Thinking

We must reorient our thinking and try to be constructive. The long hostility between Moscow and Washington, in my judgment, overdominates our thinking and our reactions. Perhaps we are in a groove. Is Russia really the biggest problem? Russia has the bomb; we have the bomb; the British have the bomb. In a relatively short time, 15 nations may have the bomb. This would worry Washington, but might it not be equally worrisome to the Kremlin? Really both sides could breathe more freely if there were any assurance that the monopoly of the annihilative potential could be permanently retained

(Concluded on page 430)

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OUR ATOMIC POLICY

(Concluded from page 428)

within the three nations — three nations which responsibly know that certain retaliation would be forthcoming if their bombs were used.

Do we try as hard as we should — dispassionately — to understand the Russians? Or do our fears instinctively lead us to firm, but distorted, conclusions? This is a challenge to every thinking citizen.

Many of you have experienced the thrills of participating in a team effort, and of working toward a goal everyone feels is highly important. Once I thought that this was uniquely an American characteristic. My eyes were opened when 20 scientific secretaries came to the United Nations Building to work with me to prepare for and to operate the conference that was to be held a few months later in Geneva. Within 10 days those men, coming from 14 different nations, had become a team with an *esprit de corps* that made them feel they could tackle and lick any problem that might arise. I can personally testify that Russians, Argentines, Pakistanis, Yugoslavs, and French can respond in a loyal team to the challenge of a great task in the same way that Americans, British, and Canadians can.

It may seem too visionary to believe that man can rise above his historic nationalism to assure a good life for his grandchildren. But the Proverbs tell us: "where there is no vision, the people perish." These words are poignantly apt today. I have faith that the resources of imagination, of intelligence, and of courage in able men everywhere can and will be enlisted to make the vision a reality.

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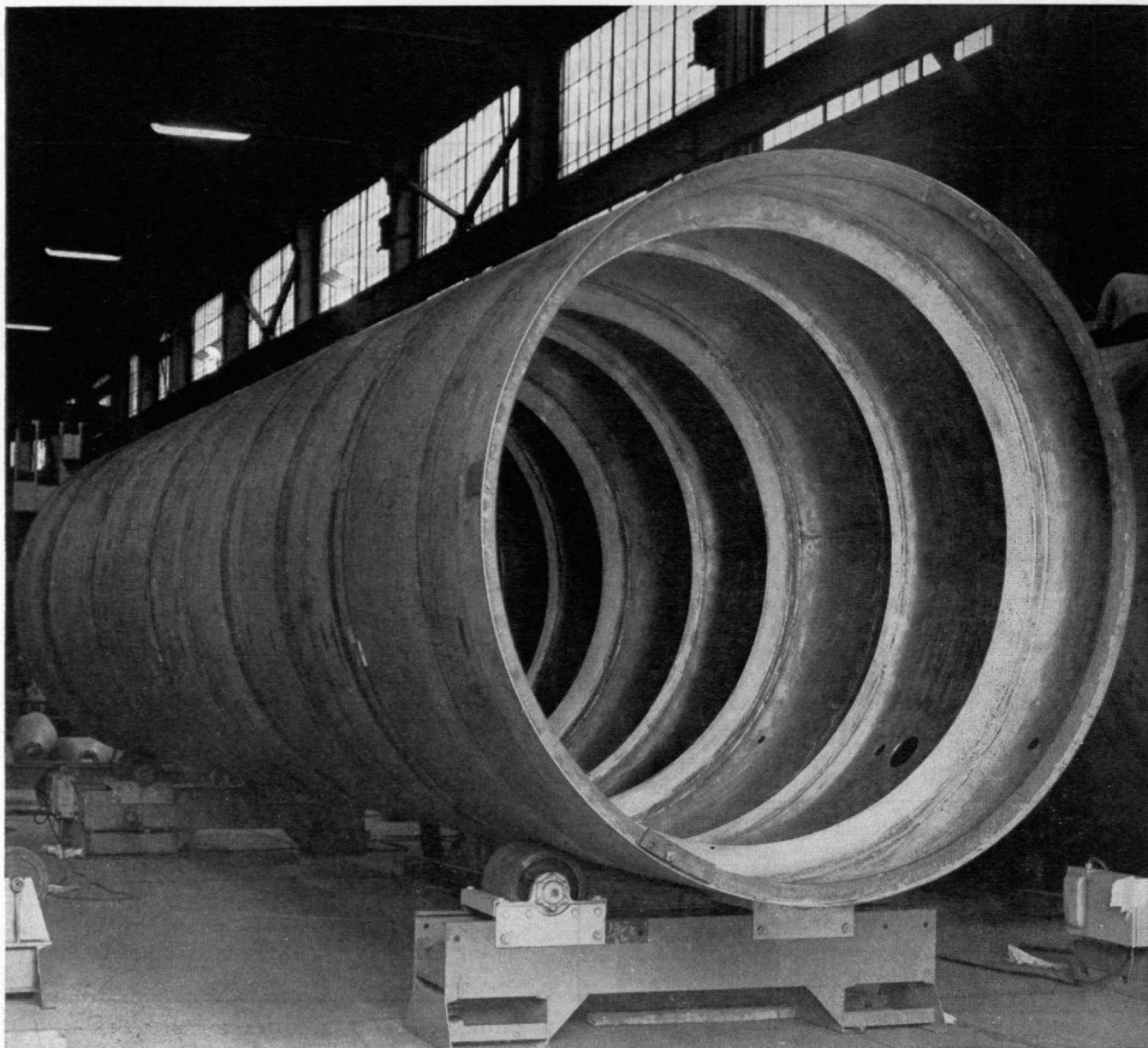
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ALUMNI AND OFFICERS IN THE NEWS

Upward-Bound . . .

In addition to the 27 Alumni recorded on page 399, other Alumni advanced to new posts include:

CHRISTIAN W. BERTELSEN'22 as manager, East Boston Repair Yard, Bethlehem Steel Company . . . PETER C. DIRKSEN'24 as a director, Merchants National Bank, New Bedford, Mass. . . ALBERT T. BOTH'27 as assistant vice-president of operations, Cleveland Mill Division, Chase Brass and Copper Company.

L. SIGFRED LINDEROTH, JR.'30 as associate director, Department of Engineering, Central Research and Engineering Division, Continental Can Company . . . ALEXANDER H. KUHNEL'31 as manager, Special Devices Division, The Austin Company . . . KENNETH G. HOLDOM'35 as manager, Eastern District, J. F. Pritchard and Company.

WILLIAM H. HOPE'36 as manager of research and development, Kidder Press Company, Dover, N. H. . . . NESTOR SABI'37 as division manager, International Sales, Dorr-Oliver, Inc., Stamford, Conn. . . . ROBERT R. CHASE'39 as superintendent, El Paso Refinery, The Texas Company.

WALTER TURANSKY'41 as superintendent and estimator, Frank E. Downes Construction Company . . . HARRY MAJORS, JR.'44 as head, Mechanical Engineering Department, Seattle University . . . R. CLARK DUBOIS'48 as assistant chief engineer, Manning, Maxwell, and Moore, Stratford, Conn.

ROBERT G. DAVIDSON'50 as a member, Planning Board, City of Newton, Mass. . . . EUGENE S. MACHLIN'51 as acting director of research, Utica Metals Division, Kelsey-Hayes Company . . . ANDREW S. KARIOTIS'54 as manager, Dallas, Texas, sales office, Sprague Electric Company . . . CHARLES F. CHENEY'57 as manager, Passaic, N. J., regional office, Kellogg Switchboard and Supply Company Division, International Telephone and Telegraph Company.

Birthday Greetings . . .

Among the Alumni to whom birthday congratulations are appropriate this month is CHARLES H. WARNER'89, whose 90th falls on June 18. Eight others are due to celebrate their 85th anniversaries and 14 their 80th, namely:

Born in June, 1873 — HORACE A. CRARY'94 and WILLIAM E. FIELD'96 on the 1st; JOHN H. PARDONER, JR.'96 on the 7th; ROBERT A. DAVIS'96 on the 18th; ALBERT H. SPAHR'96 on the 19th; THOMAS H. WIGGIN'95 on the 20th; HOWARD A. NOBLE'97 on the 22d; and HIRAM B. HARTWELL'96 on the 30th.

Born in June, 1878 — WILLIAM S. HART'00 on the 1st; JOHN C. GREENLEAF'99 on the 2d; FRANK K. MITCHELL'02 on the 3d; MRS. CLARENCE W. HUGHES'00 and HORACE W. OXNARD'00 on the 4th; FRANCIS K. BAXTER'01 on the 8th; WILLIAM BREWSTER'98 on the 9th; EARL B.

CRANE'02 on the 12th; JOHN W. FARLEY'98 on the 15th; LEWIS B. ABBOTT'99 on the 27th; WILLIAM O. KENNARD'01 on the 28th; EMANUEL GORFINKLE'02 and FRANK E. HERMANN'S'99 on the 29th; and PERCY R. ZIEGLER'00 on the 30th.

With these 23, the rolls of the Alumni Association will include a total of 65 living nonagenarians and additionally a total of 701 octogenarians.

Book Bargains . . .

Thermodynamics for Chemical Engineers, second edition, by HAROLD C. WEBER'18 and HERMAN P. MEISSNER'29. (New York: John Wiley and Sons, Inc., 1958, 507 pages, \$8.50.)

The Space Child's Mother Goose, verses written in the lingo of the nuclear age by FREDERICK WINSOR, JR.'25 and illustrated by Marian Parry. (New York: Simon and Schuster, Inc., 1958, \$3.50.)

Atomic Explorations, treating recent developments in atmospheric explorations, edited by HENRY G. HOUGHTON'27. (New York: The Technology Press of M.I.T. and John Wiley and Sons, Inc., 1958, 112 pages, \$5.00.)

Neutron Cross Sections, a monograph for people who must use cross sections

but are not nuclear physicists, by DANIEL J. HUGHES'30. (New York: Pergamon Press, 1957, 182 pages, \$5.00.)

Mathematics and Computers by JULES A. LARRIVEE'30 and George R. Stibitz. (New York: McGraw-Hill Book Company, Inc., 1957, 228 pages, \$5.00.)

An Introduction to the Theory of Random Signals and Noise by WILBUR B. DAVENPORT, JR.'43 and WILLIAM L. ROOT'43. (New York: McGraw-Hill Book Company, Inc., 1958, 393 pages, \$10.00.)

The Underground City, a novel about the French underground and the Dujardin affair of the late Forties, by HAROLD L. HUMES, JR.'49. (New York: Random House, 1958, 755 pages, \$4.95.)

Economic Development, one of the McGraw-Hill Economics Handbook Series, which discusses ingredients and aspects of economic growth of underdeveloped countries, by CHARLES P. KINDLEBERGER, Professor of Economics. (New York: McGraw-Hill Book Company, Inc., 1958, 316 pages, \$6.50.)

Linear Programming and Economic Analysis by PAUL A. SAMUELSON, Professor of Economics; ROBERT M. SOLOW, Associate Professor of Economics; and Robert Dorfman. (New York: McGraw-Hill Book Company, Inc., 1957.)

Obituary

HENRY W. CLEMENT'90, April 6
JOEL H. PILLSBURY'96, April 20
LAMBERT N. WHITNEY'96, March 23°
CHARLES H. GODBOLD'98, November 10°
HAROLD W. JONES'98, April 5°
LEWIS J. SEIDENSTICKER'98, March 20°
WILLIAM R. STRICKLAND'98, February 16°
RUDOLPH TIETIC'98, February 8°
MRS. BENJAMIN F. LOW (MARY HARRIETT DAY)'99, August 29°
FREDERICK C. WADDELL'99, April 14
GRACE LANGFORD'00, December 4
HARRINGTON D. LEARNARD'00, April 6
GEORGE V. SAMMET'01, April 13
WILLIAM JASON MIXTER'02, March 17°
A. MILDRED BARBER'03, May 4, 1957°
RAYMOND E. HANSON'03, March 28°
JAMES R. BALDWIN'04, December 24°
CHARLES E. LEAVITT'05, March 4°
WALDO V. LYON'05, April 24
RAY S. HOYT'06, March 16°
CHARLES H. SHAPLEIGH'06, March 15°
LEROY H. SHIPMAN'06, March 26°
MARION GENEVIEVE BOLAND'07, March 21°
OAK L. THROCKMORTON'08, September 20, 1957°
EVERETT M. H. FOLLANSBEE'10, April 5°
FRANK E. HODGES'10, March 10°
Wm. DEWEY FOSTER'11, April 3°
IBRAHIM F. MORRISON'11, February 27°
JOHN A. PROCTER'11, April 19
LESTER M. WHITE'12, February 27°
AUBREY E. BURNHAM'13, November 8
BENJAMIN S. MUNCH'13, February 15°
HAROLD L. NICKERSON'13, February 21, 1956
BENJAMIN B. TREMERE, JR.'13, December 28, 1956°

ANGUS V. A. SWIFT'14, March 26°
MARCUS M. ANDERSON'15, April 9
JOHN DUFF'15, April 20
BENJAMIN L. JOHNSON'15, November 6°
P. J. MUNN'15, August 23°
CALVIN TOMKINS, JR.'15, January 31°
HORACE CLEVELAND BURNHAM'16, March 14°
WALTER G. GOODWIN'16, March 24°
JOHN K. HELLER'16, September 29°
SAMUEL DANIELS'17, July 14, 1957
LYMAN C. HIBBARD'17, October 22, 1956
PAUL E. BLANCHFIELD'18, February 27°
THOMAS M. GIBBONS'18, March 18°
KENNETH S. M. DAVIDSON'19, March 19°
MAURICE A. MICHAELS'19, January 18°
FREDERICK A. PARKER'19, December 21°
FRED E. ZURWELLE'20, March 23
MALCOLM P. CANTERBURY'21, March 29
BRUCE M. MILLS'21, April 1
JOSEPH J. SCHAEFER'21, April 11
JAMES A. STALBIRD'22, March 2
WALTER S. ANDERSON'23, March 6°
G. FRANCIS DI SOMMA'24, September
GEORGE V. SLOTTMAN'25, April 21
HENRY M. STORB'25, December 31, 1956
STEPHEN V. ZAVOICO'25, April 5°
CARLOS F. FERRE'28, March 20°
ROBERT L. JONES, 2d'28, March 14°
FRANCIS D. CAREY'29, April 13
EDWARD A. FULTON'30, November 12°
RALPH AUBREY JEFFERS'30, January 26°
IRVIN R. MITCHELL'30, February 5°
ROBERT H. HANLON'33, February 16
GERHARDT N. PATITZ'35, April 11
GORDON C. SEAVEY'39, February 19°
ROLAND S. BARKER'45, 1955
ROBERT L. HIBBARD'45, January°
THOMAS I. GILROY'50, July 2, 1955
MARTIN D. KING'51, April 19
JAMES H. DOOLITTLE, JR.'52, April 9
° Further information in Class Notes

NEWS FROM THE CLUBS AND CLASSES

CLUB NOTES

Boston Luncheon

The M.I.T. Luncheon Club of Boston met Thursday, April 17, 1958 at 12:15 P.M., at the Union Oyster House. About 50 Alumni attended to hear Raymond L. Bisplinghoff, Professor of Aeronautical Engineering, Deputy Head of the Aeronautical Engineering Department at M.I.T. He spoke on M.I.T.'s present and future role in education and research in astronautics.

He surprised us with a quotation from Jules Verne's famous story "Round the Moon," written about 100 years ago. A projectile in the story was fired from Tampa, Fla.; and after a journey of some months in which it orbited about the moon, it crashed into the Pacific Ocean, where all hands were rescued. Thereby, the master of science fiction in his satire posed remarkable powers of prophecy.

Observing the violent reaction in the United States to sputniks, Professor Bisplinghoff pointed out that not the least affected have been the engineering colleges in which such questions have been raised as: Should technical education at the college level be changed radically? Should engineering be junked in favor of pure science? Should we let industry teach the professional practice of engineering while the colleges stick to the fundamentals?

He stated that we must be alert to new ideas and continue to introduce more science and mathematics into engineering curricula, as well as to produce a higher percentage of graduate students. Research should be coupled to education even more than at present, but the answer does not lie in violent change but rather in continuation of existing trends which fit into the pattern of most first-class engineering schools. Much of the vitality of engineering education is establishment of a pattern of thought which engenders intelligent judgment in the application of scientific principles and embraces complex engineering problems as complete entities to be developed, designed, fabricated, and finally used.

When the Wrights made their first successful heavier-than-air flight, there were no schools of aeronautical engineering; and none appeared until 15 years afterward. However, in the past 40 years such schools have been a tremendous factor in the development of the technology of flight and its military and civil applications. Similar sources of talent will be required in astronautics, and these should emanate from the existing schools of aeronautical engineering. Aerodynamics are still important since the propulsion vehicle must depart and re-enter through the earth's atmosphere. Careful synthesis of the ingredients of flight must be made with a vehicle which has only a narrow

margin between success and failure. This ability has been the stock and trade of the aeronautical engineers.

At M.I.T., the department has been moving steadily in the direction of more astronautics in its curriculum and research in the past five years. An objective is construction of a new facility to be known as the M.I.T. Center for Aeronautics and Astronautics in the vicinity of the Naval Supersonic Laboratory. Consolidation of existing classrooms for research in one area will be provided when the Center is completed.

Since some of the claims made of great military values for satellites, space vehicles, moon stations, and the like do not stand up well under close examination, one asks: what is the real justification for entering into any space travel enterprise? It appears that there will be important known military applications for worldwide communications which have apparently very sound substance. The fact that we now have the technical tools available seems reason enough to undertake a program to explore space.

Vincent T. Estabrook'36, as chairman of the nominating committee, presented the following slate of officers for 1958-1959: Chairman, Parke D. Appel'22; Secretary-Treasurer, Edward B. Hubbard'31; Executive Committee, C. Vincent Vappi'48, Joseph M. Lynch, Jr., '49, and Roscoe E. Sherbrooke'22. — PARKE D. APPEL'22, *Secretary-Treasurer*, 28 Winthrop Road, Belmont 78, Mass.

Buffalo and Niagara Falls

The M.I.T. Club of Buffalo and Niagara Falls, New York, had a dinner meeting for members and their wives on Tuesday evening, March 25. The dinner was held at the Buffalo Trap and Field Club. It was attended by a total of 38.

A representative from the Tonawanda Laboratories of the Linde Company gave an interesting presentation of the manufacture of synthetic sapphire and ruby indicating many new industrial applications of this material and its importance to our national defense plans. A color movie showed the process of cutting and polishing various designs of gem stones. The collection of rough and finished gem stones and jewelry which was part of the Linde exhibit included the "Coronation Necklace," a specially designed neckpiece worn at Queen Elizabeth's coronation. This article features an 80-carat star ruby surrounded by numerous smaller rubies and diamonds. Needless to say, the ladies showed much enthusiasm for the artistic possibilities of the synthetic sapphire product while the husbands appeared to be more interested in its industrial applications.

The next dinner meeting was scheduled to be held on April 28, 1958, in the Niagara Falls area. — RAY S. HAMILTON'24, *Secretary*, 144 Linden Avenue, Buffalo 16, New York.

Central Massachusetts

On February 4 some 60 Central Massachusetts Alumni, wives, and friends gathered at the Stockholm Restaurant, Worcester Airport. Following a fine smorgasbord, Dr. James M. Faulkner, Medical Director of M.I.T., spoke on the subject, "Care and Feeding of Husbands." His excellent talk centered on the relationships between cholesterol and arteriosclerosis. Even his admonitions regarding overweight were well taken. However, I think our wives filed this information away for future use against us poor unsuspecting husbands.

A grand night, April 10, brought several members of the Class of 1922 to the Hotel Bancroft in Worcester to hear and see their classmate Whit Ferguson. The subject for the evening was "Brainstorming," and Whit gave us a fine introduction to this new method of organizing creative thinking. Bob Brown of the Class of 1922 was chairman for the evening and the other '22 men attending were: Fred Dillon, Jim Duane, Robert Tonon, and Ted Miller. We were particularly grateful to Whit for coming all the way from Buffalo. As treasurer of the Creative Education Foundation, Inc., he is extremely interested in furthering the concepts of "Brainstorming." Also, we are sure that he appreciated the efforts of his out-of-town classmates to attend. A thoroughly enjoyable time was had by all.

On May 23 the Boston Pops night with dinner at the Faculty Club provided a fitting finale to a most successful season.

In looking through the *Worcester Telegram* we were interested to learn of the honor given our member Professor Emeritus Carleton A. Read'91 of Worcester Polytechnic Institute. Professor Read was presented with a certificate of continuous membership and "distinguished service" in the American Society of Mechanical Engineers for the past 65 years. — IRVINE F. WILLIAMSON'50, *Secretary*, 21 Eastwood Road, Shrewsbury, Mass. HARRY B. DUANE, 3d, '57, *Assistant Secretary*, 22 Elmwood Street, Worcester, Mass.

Chicago

The only members of the M.I.T. Club of Chicago who were fooled on April 1 were those unable to attend a gala club meeting. Dr. and Mrs. Julius A. Stratton were welcomed at a reception and dinner at the Furniture Club, with 175 Alumni and wives in attendance. Robert C. Meissner'43, Club President, introduced the speakers' table and asked Philip L. Coleman'23, head of the local Educational Council group, to welcome the 25 high school principals from the area who had attended to hear Dr. Stratton's talk. Dr. Robert E. Wilson'16 introduced Acting President Stratton. All were most interested in Dr. Stratton's thought-provoking discussion of M.I.T.'s role in our

defense effort. Robert S. Faurot'44, Club Vice-president, was responsible for arrangements, making this our most successful meeting of the year. The Club hopes Dr. Stratton's travels will bring him to Chicago often.

John T. Shutack'43 arranged for us to hear Mr. Maxim M. Cohen, General Manager of the Chicago Regional Port District, at an earlier meeting in February. With the advent of the St. Lawrence waterway, Mr. Cohen's talk on current activities and plans Chicago has for becoming a major port was of particular interest to those of us living in this area.

— JOHN R. KIRKPATRICK'48, *Secretary*, 9 South Clinton Street, Chicago 6, Ill.

Cleveland

The final meeting of the 1957-58 season was held Tuesday night, April 8, at the University Club. We were honored to have Dr. Thomas F. Jones, Jr., Associate Professor of Electrical Engineering at M.I.T. and soon to be head of the Electrical Engineering Department at Purdue University, as our guest and speaker. The Cleveland Purdue Alumni were invited to the meeting, and many took advantage of the opportunity to meet Dr. Jones.

A short business meeting was held, during which two changes were made in the club constitution and new officers were elected: President, H. Arthur Zimmerman'37; Executive Vice-president, H. Bruce Fabens'44; Secretary, Heath Oliver'55; Assistant Secretary, Richard E. Hare'51; Treasurer, Thomas E. Weil'49; and Assistant Treasurer, Kenneth A. Benjamin'50.

The club is especially indebted to S. Floyd Stewart'24, Herbert J. Hansell'46, and Jay P. Auwerter'38, Past President, Executive Vice-President, and Secretary, who have done an exceptionally fine job for the past two years.

We are looking forward to next fall and the annual beer party, which is the kickoff meeting for the 1958-59 season. — HEATH OLIVER'55, *Secretary*, 17619 Winslow Road, Shaker Heights, Ohio.

Fort Worth

The first meeting of 1958 was held at the Cross Keys on the 20th of March. The guest speaker was Dr. W. A. Orr of Convair, who spoke on the timely subject of "Designing for Manned Space Flight." Dr. Orr is also the author of two current articles dealing with space flight. The turnout for the meeting was very good, and the following were in attendance: Mr. Thomas S. Byrne'13; Mr. and Mrs. Robert S. Gooch'51; Mr. and Mrs. Loris M. Hailey'50; Mr. and Mrs. James N. Patterson, Jr.'51; Mr. George C. Sumner'49; Mr. and Mrs. Ralph R. Uhrmacher'31; Mr. and Mrs. John S. Prigge, Jr.'51; Mr. T. Guy Spencer'56; Mr. and Mrs. Robert G. McKinney'55; Mr. and Mrs. Weston K. Norman'47; and Mr. and Mrs. Ernest E. H. Schurmann'52. The last item of business at the meeting was the election of officers for 1958. The following slate was presented by the nominating committee and elected by acclamation: President, James N. Patterson, Jr.'51; Vice-president, George C. Sumner'49;

Secretary-Treasurer, Ernest E. H. Schurmann'52.

One of our Alumni, Joseph Morgan'37, has been appointed chairman of the Department of Physics at Texas Christian University effective September 1, 1958. Dr. Morgan is presently professor of physics and director of engineering at Texas Christian University. — ERNEST E. H. SCHURMANN'52, *Secretary*, 6008 A Karen Circle, Fort Worth, Texas.

Mexico

The 10th Annual Fiesta of the M.I.T. Club of México City, founded in 1910 as the earliest of the present 26 foreign M.I.T. Clubs, took place March 13 to 15, and we were favored by a record total of 45 visitors from the United States, including our special guests of honor, Alfred E. Perlman'23, President of the New York Central, and Sra. Perlman.

Our program opened with an assembly for cocktails on Thursday, the 13th, at 1:00 P.M., at the Hotel Vasco de Quiroga, after which the ladies were escorted for luncheon to the home of Gonzalo Garita'16 in the Lomas de Chapultepec. Meanwhile, 41 Alumni remained for luncheon at the Vasco, following which our President, C. M. Cornish'24, and Viviano Valdés'21, extended the official welcome to the visitors. Responses were made on behalf of the Corporation by Hugh S. Ferguson'23, and for the Alumni Association by H. E. Lobdell'17 and C. George Dandrow'22.

The next evening a cocktail buffet was held at the Vasco and "Eager Beaver" awards for attendance at six, four, and ten Fiestas were presented, respectively, to T. H. Jenkins'32, and Messrs. Dandrow and Lobdell. An appreciated high light of the evening was the receipt of a congratulatory telegram addressed to the Club by Dr. J. A. Stratton'23, Acting President of the Institute. The buffet was followed by entertainment in the form of Mexican folklore dancing in costume presented by the internationally famous troupe, *Conjunto Foklórico*.

On Saturday evening came the traditional *Noche Mexicana*, held for the second year in the spacious gardens of the home of our President and Sra. Cornish in San Ángel. Special color was lent to the occasion by many of our members and their ladies who wore costumes typical of the various regions of the country; and the food — *tacos*, *carnitas*, *enchiladas*, *pambazos*, *frijoles*, *chicarrón* — was served from conveniently arranged *puestos*. In one corner of the garden *tortilleras* were kept busy making and cooking *tortillas*; in another corner *potables*, including *tequila* and *mescal*, were available.

The climax of the evening came when the *piñata* made in the form of an enormous cardinal beaver was finally broken by John Ordway, Economic Counselor, American Embassy in Mexico; and it then transpired that the *piñata* surprisingly had contained a silver tray suitably inscribed for presentation to Sr. Cornish y Sra. by the visitors.

Plans are already underway for our 11th Annual Fiesta to be held in March, 1959. Notice of dates selected will be announced in *The Review* next autumn.

Alumni visitors this year were: Carroll D. Steele'08 of Duluth, Minn.; William L. Dennen'17 of Scranton, Pa.; Haig N. Solakian'17 of Pine Orchard, Conn.; H. E. Lobdell'17, Hugh S. Ferguson'23, and Vincent T. Estabrook'36, all of the Boston area; George B. Morgan'20 of Beaumont, Texas; William N. Barron'20, C. George Dandrow'22, Fay S. Lincoln'22, Alfred E. Perlman'23, and Leonard Milano'26 of the New York area; Arturo Ponce Canton'22 of Mérida, Yucatan; Louis J. Darmstadt'26 of Norwichtown, Conn.; Louis F. Southerland, Jr., '29, and R. Max Brooks'36 of Austin, Texas; Thomas H. Jenkins'32 and Barrett B. Russell, 3d,'43, of Houston, Texas; Kenneth B. Lucas'32 of Montreal, P.Q.; Richard M. Armstrong'33 of Chester, Pa.; Charles B. Stuart'34 of Oklahoma City, Okla.; John C. Austin'36 of Chicago; and Javier Sada-Narro'47 of Monterrey, N.L.

Members of our M.I.T. Club who participated in the 10th Fiesta were: Club officers and members of the Committee — Clarence M. Cornish'24, President; Alvino Manzanilla'31, Secretary; Agustín M. Valdés'25, Treasurer; Thomas M. Nevin'24, José Felipe Pescador'45, James J. Rattray'48, Charles W. Davis'49, Martin Cornish'50, and Peter R. Ehrenberg'52.

Attending as active members of our M.I.T. Club were: Arthur M. Constantine'00; Manuel A. Hernandez'13; George D. Camp'16; Gonzalo Garita'16; Viviano L. Valdés'21; Fernando de la Macorra'23; Oscar Aros Villa'29; Leon Avalos Vez'29; Emilio N. MacKinney'30; Lyman Chandler, Jr., '31; Harland Danforth'31; Carlos Ziegler'32; Hipolito L. Gerard'35; Leonard Zeevaert'40; Erwin Anisz'42; Charles R. Stempf'42; Enrique Curiel Benfield'43; Arturo Morales'44; Leopoldo Nieto'44; Hector M. Orozco'45; Pedro Albín, Jr., '47; Armando Santacruz Baca'54; and Guido D. Guzman'55. — ALVINO MANZANILLA'31, *Secretary*, Horacio 1032, Polanco, México, D.F.

Miami Valley

Being so near Wright-Patterson Air Base, we in the Miami Valley tend to agree wholeheartedly that this is the space age. What we forget is that flight technology is a superstructure based on a growing number of other, more mundane arts, each of which is simultaneously mushrooming from simplicity to complexity. This viewpoint has never been brought home so clearly as it was during a March 22 plant trip sponsored by the Dayton Club through the Frank M. Tait Station of the Dayton Power and Light Company.

Ten old beavers burrowed their way through the labyrinth of tubes, welding cables, H beams, and insulation, all of which ended up in April in an operating boiler furnishing 2,400 pound steam. Steel and concrete for an additional boiler were situated alongside. The new turbine-generator equipment had some resemblance to the current current producers, but we old grads had difficulty in absorbing the extent of the advancements into the range of our academic training. Very few of us, I might add, have opened any steam tables since the days of the terrazzo halls. In spite of these indications of per-

sonal decrement, the trip was an invigorating experience for all of us.

A certain amount of small talk occurred with enjoyment at the pretrip lunch at Sacksteder's Restaurant. Alfred W. French, Jr., '26, of Piqua, Ohio, surprised the Alumni by his first attendance at a club function in years, even though he has crossed paths with some in his travels for the French Oil Mill Machinery Co. Leavitt L. Custer '13 was outstanding in his pride of seniority.

The next and last meeting of the Club will be its annual picnic in June at the Dayton Community Golf Course. — R. T. OLSEN '42, *Secretary*, Standard Register Company, Dayton 1, Ohio.

New York

The out-of-town membership continues to grow, and as it grows the Club's importance as a headquarters for out-of-town members is also growing. Last week, for example, a group from the Institute used the club quarters as their office as they had work to do in New York.

On April 10, the Westchester Group held a dinner meeting at which Mr. Russell Walters from the Martin Company gave a most interesting talk on the Vanguard and satellite programs.

The annual golf party is scheduled for June 3, at the Scarsdale Golf Club. The golf party has always been a bang-up affair, and all members are urged to attend.

The class luncheon program is progressing well. As most members know, each Class meets for lunch once a month at the Club; why not join your friends this month? — ROGER G. BLUM '41, *Secretary*, 285 Old Colony Road, Hartsdale, N.Y.

Northern New Jersey

The M.I.T. Club of Northern New Jersey concluded a successful season with a dinner meeting for members and their wives on April 22.

Professor F. Neal Hartley of the Institute was the speaker. Other speakers during the year were Dr. James R. Killian, President of the Institute; Dr. Elbert P. Little; and Colonel John P. Stapp. Attendance this season was about twice that of the previous season.

Officers for the year 1958-59 were elected at the April 22 meeting. The new officers are as follows: President, Sumner Hayward '21; Vice-president, James A. Daley '50; Vice-president for Programs, Warren J. King '48; Secretary, Louis F. Kreek, Jr., '48; Treasurer, Joseph Wenick '21; Board of Governors, Earl E. Ferguson '30, John A. Bradshaw '35, and Albert R. Shelby '45. — LOUIS F. KREEK, JR., '48, *Secretary*, 82-B Woodland Road, Short Hills, N.J.

Oklahoma

During the past year, the M.I.T. Alumni in the Oklahoma City area have become organized and a very active subsidiary to the M.I.T. Club of Oklahoma. The Tulsa group has always been the bulwark and major representative of the Institute for this state, and now a program has been initiated to encourage other

communities to participate in affairs related to M.I.T. and the educational problems in Oklahoma.

On February 17, 1958, the winter meeting was held in Oklahoma City for the first time; and Alumni who attended the evening session came from cities and towns throughout the state. Dr. Scott Walker '40, President of the club from Tulsa, presided at the business meeting. Mr. Breene M. Kerr '51 of Oklahoma City gave a talk on what the local Alumni had been doing on three related programs: (1) our work with the superintendent of schools, board of education, and teachers to improve science and mathematics training at the secondary level; (2) plans to provide summer employment for M.I.T. students; (3) ways and means to attract M.I.T. graduates to this area of the United States for permanent employment.

Dr. James Harlow, Executive Vice-president of the Frontiers of Science and Dean of Education at the University of Oklahoma, addressed the meeting on the many problems of secondary education that face the nation today. He concluded that only by active interest on the part of individuals, alumni organizations, and so forth at the local level can the necessary changes be brought about the soonest. Dr. Harlow indicated that education was everyone's business and responsibility, and that our schools deserve all the support and assistance we can offer.

Finally we had a film that was prepared by M.I.T.'s Physical Science Study Committee under the direction of Dr. Jerrold Zacharias on the presentation of a physics lecture to high school students. Bill Sherry '21 distributed several of the supplementary physics texts that are a part of the Physical Science Committee's project.

This new approach to high school physics is a marvelous innovation as compared to the classically antiquated techniques in national practice today. The Oklahoma City Alumni are hopeful that this newly developed physics course will become standard curriculum in this area in the near future. Perhaps other M.I.T. Alumni organizations could start their own educational programs.

We have also had a number of luncheons, cocktail parties, and evening meetings for students at Christmas, visiting dignitaries, and the like. Robert K. Weatherall, Assistant to the Dean of Students, was here last fall; and our good friend Joe Conrad has stopped off twice while on Alumni Fund business. Incidentally, Joe's report on the solicitation program for March 19, 1958, had Oklahoma City in the number two spot in the world, 70.8 per cent participation, for our category in the present fund raising campaign. Chuck Stuart '34 is our chairman.

Of course our social functions provide us with recreation and fun, but our more serious pursuits provide something better — satisfaction. — JOHN P. DOWNS '51, *Assistant Secretary*, 1952 Northwest 20th Street, Oklahoma City 6, Okla.

Philadelphia

On April 12, our Philadelphia Club was privileged to enjoy the beautiful facilities at Longwood Gardens again. The McCauleys arranged an exceptional black tie

affair. We were honored by the presence of many distinguished people. Visitors joined us from Virginia, western Pennsylvania, New York State, New Jersey and Massachusetts. We were delighted to have with us particularly a fine representation from M.I.T., among whom were R. M. Kimball '33, Secretary of the Corporation; J. J. Snyder '44, Treasurer of the Corporation; H. E. Lobdell '17, Vice-president of the Alumni Association; E. P. Brooks '17, Dean of the School of Industrial Management; and past presidents of the M.I.T. Alumni Association C. G. Dandrow '22 and T. T. Miller '22. We were particularly happy to have Mrs. Karl T. Compton, Mrs. James R. Killian, Jr., and Mrs. Clarence D. Howe with us. A total of 307 attended.

Following the cocktail hour, we enjoyed a fine dinner in the main ballroom. After dinner, S. K. McCauley '41 made introductory remarks as presiding officer. We were greeted by Gilbert M. Roddy '31, President of the Alumni Association. He told us of the world-wide alumni activities. Dr. James R. Killian, Jr., '26, who is now Special Assistant to the President of the United States, addressed us with an appraisal of the United States's present scientific status. Then the Right Honorable Clarence D. Howe '07, former Minister of Trade and Commerce for the Government of Canada, talked to us about "Canada and the Space Age." As a final part of the program, we were treated to a display of the illuminated fountains.

Membership has now increased to a record of 492. Our next meeting is tentatively planned for Monday, October 27, at the Franklin Institute. — HERBERT R. MOODY '41, *Secretary*, 8609 Patton Road, Wyndmoor, Philadelphia 18, Pa.

Puerto Rico

The M.I.T. Club of Puerto Rico held its annual meeting at the Reserve Officers Beach Club, Puerta de Tierra, Puerto Rico.

After having discussed general matters pertaining to the Club, those present elected the new members to direct the Club during 1958.

The new board of directors is as follows: President, Pedro A. de Castro '40; Vice-president, William Reed; Treasurer, Richard L. Bolin '50; Secretary, Jorge Lopez Ramirez '45; members, Telesforo Carrero '47, Angel Del Valle '43, and Past President Ulises Barros Loubriel '55. — ANTONIO C. KAYANAN '42, *Secretary*, P.O. Box 9447, Santurce, Puerto Rico.

Rochester

Brief mention was made in the May notes of our Club's sponsoring of an evening for local secondary school educators to hear about new concepts in teaching of science. On April 15 such a meeting came to pass in a highly successful manner. Invitations were sent to 32 schools in Rochester and the surrounding area to come as guests of the Club to hear Dr. E. P. Little and Bruce Kingsbury '44 tell of the work of the Physical Science Study Committee; 31 schools sent representatives to this meeting, indicating without doubt the interest which the work of this

committee has stimulated. Thirty-six club members were also on hand to swell our ranks to 120 people for this high light of our season's activities.

Dr. Little's description of the new physics course, together with practical demonstrations, met with great enthusiasm. We feel that this meeting provided a real service to the community and greatly enhanced the name of M.I.T. with our secondary school people. Our president, F. J. Kolb, Jr., '38, was directly responsible for this meeting; and he was ably assisted by H. Essley '36, head of our Educational Council. On April 16 Sam Jones from the Student Aid Office at M.I.T. was in Rochester to sit with our local scholarship committee headed by Dwight Vandevate '22 and interview the local scholarship applicants. Nineteen applicants were interviewed and recommendations made for award of the Alumni Regional scholarship and M.I.T. Club of Rochester scholarship. Assisting Dwight Vandevate and Sam Jones in the interviews were F. J. Kolb, H. Essley, and H. E. Akerly '10.

R. E. Smith '33, who headed our personal solicitation program this year, has completed his project. His final report showed 319 Alumni contacted with 70.3 per cent of the contacts being favorable. With the large number of Alumni in our area, this job is a difficult task; and it was most ably handled by Bob Smith this year. — J. K. LITTWITZ '42, *Secretary*, 191 Rogers Parkway, Rochester 17, N.Y.

Spain

During March we were visited by Dr. Joseph W. Barker '16, Chairman of the Board, Research Corporation, New York; and we had the pleasure of entertaining Mrs. Barker and him and their son.

At Madrid Dr. Barker lectured in the *Consejo Superior de Investigaciones Cientificas* and at Barcelona he spoke at the American Club. On the occasion of the latter, the M.I.T. Club of Spain joined in a club supper given in a typical restaurant of the city. This meeting was a high light among the scientists of Barcelona.

The Barkers were heartily welcomed, enjoyed a few days of that wonderful Mediterranean climate, and made many good and new friends. — JOSÉ M. BOSCH-AYMERICH '46, *President*, Paseo de Gracia 30, Barcelona.

Taiwan

President J. C. Huang '29, opening the February 3 meeting at 8:00 P.M., announced that he would go abroad as leader of the Taiwan Sugar Delegation assigned by our government to study the modernization of sugar machinery and improvement of sugar industry later in the month and would be absent for a period of more than five months. He also announced that Mr. Joel I. Connolly '16, Vice-president, would probably be returning to the States within a few months. As club members usually meet once every three months, he asked those present to consider a re-election of officers. The members present unanimously agreed to an election, which proceeded at once.

The following officers were elected for 1958: President, C. Y. Chen '18, III; Vice-president, T. M. Wong '29, VI; Secretary, C. C. Tai '46, I; and Treasurer, H. T. Liu '37, XVI. Both new president C. Y. Chen and new vice-president T. M. Wong were requested to address the members. They promised to do their best for our Club and also asked our members to co-operate with them to improve our club business.

Finally, retiring President J. C. Huang asked every member attending to say something about himself or give some news about other members. After each man had his say, the meeting adjourned at 9:00 P.M. in a most jolly atmosphere.

Members attending the meeting, held at the guest house of Taiwan Sugar Corp., 166 Kier-Kuo South Road, Taipei, included: K. K. Choong '38 and Mrs. Choong; Yen Shen '42; J. C. Huang '29 and Mrs. Huang; J. A. Lo '21; M. C. Chen '26; Chi Ouyang '37; T. H. Chin '22; M. C. Chang '39; W. S. Lu '20; S. H. Fong '38; S. S. Kwan '18; S. M. Lee '18; T. M. Wong and Mrs. Wong; C. L. Wu '18 and Mrs. Wu; T. K. Kang '38 and Mrs. Kang; C. F. Hsu '35; C. T. Chien '22; H. T. Liu '37 and Mrs. Liu; C. Y. Chen '18 and Mrs. Chen; and C. C. Tai '46. — C. C. Tai '46, *Secretary*, Taiwan Power Company, 39 East Huo-Ping Road, Section 1, Taipei, Taiwan.

Virginia

On February 28, 1958, we met at the Commonwealth Club in Richmond for dinner and for a most interesting presentation by John Pershing, General Manager, Richmond-Petersburg Turnpike Authority. Mr. Pershing graduated from Princeton University in 1921 and the Harvard Law School in 1924. Since that time, he has played a major part in the many turnpikes constructed throughout the United States; and his most recent accomplishment has been the construction of the Richmond-Petersburg Turnpike, which will soon be placed in operation.

Mr. Pershing discussed the tremendous legal implications as well as engineering problems of building a major facility such as this. We were amazed to learn of the many complex legal problems involved, not only in constructing a turnpike of this type but because of the fact that it crosses so many boundaries and lines of authority.

At the conclusion of the meeting, emphasis was placed upon the Alumni Fund Drive and the need for participation by everyone. — SCHRADER F. RADTKE '40, *Secretary*, 1106 Lake Avenue, Richmond, Va.

Western Pennsylvania

On April 2, 1958, this Club held its annual student guidance counselors' meeting at the University Club in Pittsburgh. Present as guests were representatives of the Pittsburgh public schools and 10 of the major high schools in the area.

A few remarks by Tom Stephenson '45, our President, the meeting was turned over to Henry Avery '41, Regional Chairman, who introduced Professor B. A. Thresher '20, Director of Admissions at M.I.T. Professor Thresher gave us very good insight into the difficult job of determining who can be admitted of the

extremely large number of applicants. The low number of students who are disqualified speaks well for the work of our Admissions Office. — STUART D. MILLER '32, *Secretary*, 3043 Dwight Avenue, Pittsburgh 16, Pa. GEORGE M. COLVILL '51, *Assistant Secretary*, R.D. 1, Eightyfour, Pa.

Women's Association

The M.I.T. Faculty Club was the scene of the dinner meeting of the Association on March 26. Eight women of the graduating class and one junior were guests of the 25 members who attended. In the absence of the President, Vice-president Frieda Omansky Cohen '45, welcomed the seniors and told them they would automatically become members of the Association upon their graduation. She also announced that Emilia Ivanoff is to be our student correspondent for the Newsletter.

In accord with a recent decision of the Association, a prize of \$100 for high academic accomplishment was then presented to Carol Diffey, a junior physics major from Texas. As Carol had not known why she had been invited to the meeting, her surprise and happiness at this award were complete and delightful.

We learned that Frances Emery Wyppler's daughter won the first prize at the junior level of the Weston, Mass., Science Fair. Her interest is biology.

Two Alumnae shared the program. Katherine Salisbury Hazen '28 gave a light account of how she has put her professional education to work in nonprofessional fields as a housewife, mother, and assistant to her husband both at home and abroad. Dr. Leona Norma Zarsky '41 followed with a talk on "The Importance of Basic Sciences in Medical Research." She has been doing research on heart diseases for a number of years at the Beth Israel Hospital in Boston. She described how cases of ventricular standstill, or fibrillation, can be controlled by electrical means through the chest wall, and the many times she has utilized some of the M.I.T. courses which, as a student, she had considered superfluous. — KATHERINE SALISBURY HAZEN '28, *Recording Secretary*, 81 Clark Street, Belmont 78, Mass.

CLASS NOTES

1891

For many years we have held our banquet and annual meeting on the Saturday preceding the Alumni Day for all Technology men held on the following Monday. This year we will give up our usual meeting at The Brookline Country Club on Saturday; and instead we will hold our annual banquet on Monday in conjunction with, and as a part of, the Alumni Day exercises.

The management will reserve a suitable place where we shall eat together and hold our meeting. This will be at the central quadrangle of Technology, in Cambridge, at one o'clock on Monday, June 16. Each of us will make his own reservation and secure his ticket through the mail as set forth in the advance notices.

Do come if you can make it; and stay over for afternoon exercises and Boston Pops in Kresge after the evening banquet, if you can do so. We will sit together in reserved seats at that great occasion.

Now let us all make a real effort to come and make this reunion one long to be remembered with pleasure and gratitude. — WILLIAM CHANNING BROWN, *Secretary*, 36 Foster Street, Littleton, Mass.

1894

News from the Class during the past month has been very limited but the Secretary is glad to report that a letter from Harold Chase indicates that he is still well and active as a textile consultant at his long-time post with the Dan River Mills at Danville, Va. While he gives no details of his activities, one can be sure of their technical significance for that enterprising company. It is hoped that Chase may show up at Cambridge for Alumni Day, as it is now many years since he has met with the classmates at reunions or other gatherings. This statement also applies to Jack Nowell, who wrote to the Secretary that he had been busy entertaining the numerous members of his clan and distinguished visitors from overseas. Unfortunately he seems to have no intention of returning to the part of the country where he was born and bred. One who has been at his lovely home at Hillsborough in the California hills can hardly blame him for not wishing to leave it, but we here at the Hub wish that he might join us once more. A somewhat similar note from Jim Kimberly from his winter home at Tryon, N.C., has also been received. Jim no doubt will soon be going north to his summer home at Neenah, Wis., but the Secretary is hoping that he may be induced to go via Boston and take in the Alumni Day events en route. The few hereabouts would give him a cordial welcome. Of course all '94 men would be similarly treated if they would come.

The Secretary has once more been elected chairman of the board of governors of the Refrigeration Research Foundation for the 16th time, although he feels that this honor should be given better distribution. He now has a co-chairman, however, Dr. W. A. Schoenfeld, formerly a dean at Oregon State College. An excellent meeting of this Foundation was held at Dallas in March at which the Secretary again met many friends of the refrigeration industry, but no classmates. Later, in celebration of his 86th birthday, a group of his associates in the Food Technology Department at M.I.T. gave him a luncheon party at which George Owen was the real guest of distinction. George represents us on the Alumni Council most acceptably.

It is not too early to remind all '94 men that our 65th anniversary reunion will come in 1959. Make your plans to come to see the Tech of tomorrow. — S. C. PRESCOTT, *Secretary*, Room 16-317, M.I.T., Cambridge 39, Mass.

1896

The notes for this last issue have been taken almost entirely from newspapers. In a recent issue of the *Cleveland Plain*

Dealer is a portrait of a seven-year-old boy. As an aid to answering the caption, "Who is this?" the article reads: "Two short years after this picture was taken the world was clouded by tragedy. The boy's father was fatally wounded by a gunman as he was preparing to board a train for a college reunion. The shooting, a premeditated act, shocked the nation and caused millions to mourn. The funeral was held in Cleveland's Public Square.

"Out of seven children in the family, five lived to adulthood. One of these was the boy in the portrait. He was born November 21, 1872, in Washington, D.C. He attended Williams College, where he received an A.B. degree. Three years later, he received an S.B. degree from Massachusetts Institute of Technology.

"This marks his 60th year as an architect, qualifying him as probably the leading candidate for the title 'Dean of American Architects.' All those years have been spent in Cleveland; and amazingly enough, he has maintained the same office in the same downtown building for nearly 53 years. His corncob pipes have become as much a part of the room as the lighting fixtures.

"Although he has preferred private practice to public life, he has not been able to dodge the limelight. Besides designing many prominent Cleveland buildings, he was the founder of the Western Reserve University School of Architecture. He was named by President Coolidge to membership — later chairman — on the National Commission on Fine Arts, 1925 to 1930. President Hoover named him chairman of a subcommittee on blighted areas and slum areas. He became chairman of the Cleveland City Plan Commission in 1930 and served as a member of the Commission from 1929 to 1942. He lives quietly today in Bratenahl, supposedly in retirement, but he still makes it a point to go to his firm's downtown office every day."

Answer to "Who is this?" "The handsome seven-year-old boy is Abram Garfield, son of James Abram Garfield, 20th President of the United States. Mr. Garfield's firm of architects, Garfield, Harris, Robinson and Schafer, has its offices in the National City Bank Building."

"L. N. Whitney Dies. Retired Phone Official" is the headline of this article. "Lambert N. Whitney, 84, retired vice-president of the New England Telephone and Telegraph Co., died March 23. Mr. Whitney, who lived at the Somerset Hotel, was born in Council Bluffs, Iowa; he moved to Newton as a boy and attended Newton High School. He was graduated from M.I.T. in 1896, and was with the American Telephone and Telegraph for seven years. Then he transferred to the Central Union Co., Indianapolis, where he became general manager. [It was there that Joe Stickney and Lloyd Wayne reported to him.] He joined New England Telephone and Telegraph in 1914, was general commercial manager for several years during which another '96 man, Bob Davis, reported to him. He was promoted to vice-president in 1935 and retired in 1938. He leaves two brothers: George B. of Fort Lauderdale, Fla., and Philip R. (M.I.T. '02) of Moylan, Pa.; two nephews, Reed Whitney of Wilmette, Ill., and Ste-

phen M. Whitney of Marblehead; and a niece, Mrs. Alpa W. Shelton of Needham. He belonged to the Engineers Club and the Boston City Club." Sympathy of the class members was expressed by letter from the secretary. — JAMES M. DRISCOLL, *Secretary*, 129 Walnut Street, Brookline, Mass. HENRY R. HEDGE, *Assistant Secretary*, 105 Rockwood Street, Brookline, Mass.

1897

The following letter was received by your Secretary on April 7 from one of our classmates who has clearly suffered from the vicissitudes of this mortal life:

"I had been receiving free copies of The Technology Review up to and including July, 1957. Since then have received no more copies, and no more mail pertaining to the Class of 1897 and to the Institute generally. The reason may be that on June 1, 1957, I removed from 55 School Street, Middleboro, Mass., to 20 Forest Street, same town, where I still reside. This without notice of change of address.

"I am now in my 85th year, a semi-invalid, practically confined indoors at home, when not in temporary residence in the hospital. My brother refers to Massachusetts General Hospital as my alma mater. Since my 70th year, I have been forced to depend greatly on old age welfare assistance. I looked forward to and greatly enjoyed The Technology Review.

"With many thanks for your previous and much appreciated attentions, and hoping again to feel in touch with Technology news and the Class of 1897 in particular. Sincerely, Frederic S. Atwood, 20 Forest Street, Middleboro, Mass."

Our records are indeed slim in regard to the above classmate, since the above is the first communication we have received from him. He was in Course XIII according to records of the Alumni Association.

It is of unusual interest to learn of his keen desire for news of Technology affairs and particularly of our Class. We can all understand his disappointment at not receiving recent issues of The Review.

Don't forget Alumni Day, Monday, June 16. Preliminary notices give assurance of a program of unusual interest, and we look forward to seeing many of you on that occasion. — JOHN P. ILSLEY, *Secretary*, 26 Columbine Road, Milton 87, Mass.

1898

We are happy to include in the class notes the following letter from Fred Gilbert of 1471 East Johnston Avenue, Hemet, Calif.:

"I thought that it was about time for me to pass on some very pleasant experiences of the past few weeks. First, in October we had the pleasure of a visit from Howard and Mrs. Bodwell of La Jolla, which is some 80 miles south of us. He was kind enough to write us later that he had written Dan Edgerly about our two-man reunion. Later I dropped down to below sea level (more or less) to call on the Goodriches, who had been most helpful a few years back when I was considering moving to California from Montana. This was another small reunion, and both Mrs. Gilbert and I have been pepped up con-

siderably to visit with our classmates of some 60 years (or more) back. Howard says that we ought to go on to Cambridge for the 60th 'as it will, no doubt, be our last chance.' Finally, I enclose a clipping from our local newspaper regarding my latest hobby. This may well be an occasion to come back to M.I.T. and learn what is doing in our particular field of effort. Kindest regards to yourself and Dan."

We quote, in part from the newspaper clipping concerning Fred's latest "hobby." "San Jacinto Firm Typical of Growing Valley Industry. Several small, but expanding machine shops and precision tooling works are thriving in this area and seem likely to be the forerunners of more such light industry to add to the economic wealth and development of the Hemet-San Jacinto Valley. One such machine shop, the K. and R. Engineering Company, Inc., of San Jacinto, started five and a half years ago in the back end of a garage. This year, the firm expects to gross around \$600,000 in business, according to Arthur Keeling of Hemet, President and founder. Other officers, in addition to Keeling, are Maurice Russell, head of the San Jacinto Valley Chamber of Commerce, Vice-president; and F. C. Gilbert of Hemet, Secretary-Treasurer. About 85 per cent of the firm's work is now government subcontract for defense projects, with some being done for the larger aircraft plants. Most of the jobs now have been expanded into the field of electronics and high precision machine work. Future contracts and lack of space have forced the firm lately to turn down jobs. According to officials of the organization, there is a present backlog of about \$100,000 in contracts."

Hobby? We should call it a full-time job. How do you do it, Fred? Hope to see you at the 60th.

Continuing the narrative concerning Alfred Caspary, we quote the following from the *New York Times* of February 26, 1958: "Four 1848 Stamps Sold for \$18,500. Four stamps which were worth a total of four British pennies when they were issued in 1848 sold today for \$18,500. Ezra Cole, a stamp-buying agent, bought the block of four unused stamps from the Alfred H. Caspary estate. The orange stamps, bearing an engraving of Queen Victoria, were issued as British colonial stamps on the island of Mauritius in the Indian Ocean."

We regret the duty of reporting the passing of the following classmates: Charles H. Godbold on November 10, 1957; Grace Langford '00 on December 4, 1957; William R. Strickland on February 16, 1958; Rudolph Tietig on February 8, 1958; Lewis J. Seidensticker on March 20, 1958; and Colonel Harold W. Jones on April 5, 1958.

The Secretary, having experienced eye trouble for the past several months, was obliged to refrain temporarily from correspondence and the preparation of class notes. Hence, no '98 class notes in the May issue of *The Technology Review*. Fortunately, through the services of a skillful eye specialist and a measure of restraint on the part of the patient, the eyes have improved to the extent that it has been possible safely to co-operate with the

committee for the 60th and gradually resume correspondence and the preparation of class notes. Through the kindness of classmates and friends we have considerable material concerning the above classmates and other aspects of class life: which material, gentle reader, with your kind indulgence, we will reserve for later issues of *The Review*. — EDWARD S. CHAPIN, *Secretary*, The Eliot, 370 Commonwealth Avenue, Boston 15, Mass.

1899

George H. Perkins, II, died on Sunday, March 9, recorded in Boston and Salem papers. George's first work was with the Ludlow Manufacturing Co. In 1901 he became instructor in mechanical drawing at the Lowell Textile Institute, where I was already on the faculty as instructor in quantitative analysis. Thus I got to know him quite intimately. A year or so later he was appointed head of the Textile Engineering Department. In 1919 George started practice in Boston as an independent consulting engineer serving numerous textile mills in New England; he achieved a wide reputation as a consultant. As a member of the American Society of Mechanical Engineers he contributed several significant papers in the textile field. In 1924 he was elected chairman of the textile division of the A.S.M.E.; and in 1928 he organized the first national meeting of the division ever held in Boston. Until his retirement in 1956, George continued in consulting practice. He formed a partnership with his son, John, now an engineer in the mechanical division of Stone and Webster Engineering Corporation.

The *Wakefield Item* for January 21 carried a two-column article on the life of Hervey J. Skinner, a lifelong resident of that town brought into focus by his recent resignation as trustee of the local library after 47 years of service in that capacity. The item also mentions that Hervey has been associated with the Wakefield Savings Bank for 20 years and is currently its president. He is also a trustee of the Andover Newton Theological School, a trustee and member of the executive committee of the New England Baptist Hospital, and chairman of the house committee of that institution.

Mrs. Benjamin F. Low, nee Mary Harriett Day, passed away on August 29, 1957, according to a letter received at the Alumni Office. The Lows celebrated their 50th anniversary on February 15, 1955. — BURT R. RICKARDS, *Secretary*, 349 West Emerson Street, Melrose 76, Mass. PERCY W. WITHERELL, *Assistant Secretary*, 84 Prince Street, Jamaica Plain, Mass.

1900

On March 29, 1957, Charlie Smith was made an honorary member of the Connecticut Society of Civil Engineers. In presenting him for this honorary membership, Mr. Albert A. Cross, Past President of the Society, said, in part: "[He] has devoted his entire working life to the sciences or their allied activities. . . . He never lost sight of his first love, engineering. . . . I know I bespeak the sentiment of all who were closely or even remotely

associated with him on the New Haven when I say, on the occasion of his retirement, that of him it could have honestly been said, 'Well done, thou good and faithful servant.' His attitude toward retirement is one which all might well adopt — 'Keep busy!' . . . The award of honorary membership in the Connecticut Society of Civil Engineers [is a] well deserved recognition of his engineering and executive ability."

At the meeting at which Charlie was given this honorary membership, he presented a paper entitled "Engineering Experiences in Spain and in the U. S. A." This paper was most interesting and we wish that we could include it all here. But as it required 24 pages of the Society's Annual Report to record it, this is obviously impossible. The report of his recent engineering experiences was relatively brief, and the greater part of the paper was occupied by the story of his life from childhood to his retirement. It is told in Charlie's inimitable style, and all we can do is summarize the facts as follows.

Born in Somerville, Mass., in 1877, he became an orphan before he was 12 years old. He was brought up, with his two brothers, by a friend of the family. Working as a special delivery boy in the Post Office enabled him to complete high school. He entered M.I.T. in 1895 with the Class of '99, working in spare time and summers. He met with some difficulties, both scholastic and financial, at the end of his junior year. He was able to overcome the scholastic troubles at the September exams but found it necessary to stay out a year for financial recuperation. This brought him back to join the Class of 1900 for our senior year and to graduate with us. Thus his misfortune was our gain!

Following graduation, after a few months with an engineer in Willimantic, Conn., Charlie went to the Bridge Department of the New Haven Railroad in New Haven, working his way up from tracing to design. After about three years of this he went to the Lake Shore and Michigan Southern Railway in Cleveland as assistant bridge engineer in charge of outside maintenance and construction. This was followed by a period with the International Correspondence Schools as textbook writer, then in 1906 with the U. S. Geological Survey investigating the effects of the earthquake and fire of that year on steel frame buildings. Later on he was stationed at the Materials Testing Laboratories of the Survey at St. Louis. In 1907 he left the Geological Survey and went with the Missouri Pacific Railroad. Starting as assistant engineer on construction work, he was soon appointed bridge engineer with responsibility for the maintenance of 10,000 bridges and 7,200 miles of railroad in 10 states from Illinois to Colorado and from Nebraska to Louisiana. During the next six years his experiences were manifold and varied and his relation of them is most interesting. His responsibilities were much more extensive than bridge maintenance alone, and he must have accumulated valuable experience of many kinds. In 1913 he was appointed chief engineer; and he remained in that capacity for two years, leaving in 1915 to open his own office as consulting engineer in St. Louis.

Charlie's work as consulting engineer extended over a period of 12 years with many clients and a great diversity of work. The city of St. Louis made him their "Public Utility Expert" to handle the relations of the city with all public utilities. He also studied the traffic situation of the local transportation facilities, involving 88 railroads. He also was consultant for many other clients, including the Aluminum Ore Co.; the Kansas City Stock Yards; the city of New Orleans, for railroad studies for a Union Station and Produce Terminal; the city of New York, for a Rapid Transit study; and many others. On January 1, 1928, he left his consulting office to become vice-president of the New Haven Railroad, which position he held for 22 years until his retirement at the close of 1949. Here his duties were many and varied, being mostly of an executive nature. For 20 years he had the administration of the Purchasing and Stores Department.

Since his retirement, Charlie has been far from idle. In 1950 he visited the Hawaiian Islands as a delegate for the American Society of Civil Engineers; in 1952 he made a survey of the railroads of Brazil for the World Bank; in 1956 he went to Spain as a consultant for the Spanish Government. In addition to his professional career, he has had many outside activities. He has been president of the M.I.T. Alumni, member of the M.I.T. Corporation, president of the Connecticut Section of the A.S.C.E., the Connecticut Section of the National Association of Purchasing Agents, New York Railroad Club, New Haven Advertising Club, and American Railway, Bridge, and Building Association. He was a major, Construction Division, U.S. Army in World War I; member of the Task Force of the first Hoover Commission; with the War Production Board for two years in World War II; and for 15 years a member of the Connecticut State Development Commission. A recent public act was to present a paper before the New York Railroad Club on "The Changing Railroad Picture." Altogether his record is a very impressive one, and the recognition by honorary membership in the Connecticut Society of Civil Engineers was well deserved. — **ELBERT G. ALLEN, Secretary**, 11 Richfield Road, West Newton 65, Mass.

1901

The class replies are coming in very slowly, but I am very thankful for those that I have. Stanley Sears, III, Washington, D. C., has this to say: "There seems to be nothing worthy of note with me, so this will be merely a short and simple flannels of the poorly mentally equipped octogenarians. It is so long since I have seen a Tech man of my approximate vintage that I should probably not be able to recognize him. Of course my associations and general monkeyshines were in connection with my regular Class (1900), only I did so splendidly in my scholastic work in senior year that they gave me an encore. About my only activity in recent years has been golf (Army and Navy Country Club) and interoffice teams in the Internal Revenue. More lately I have given it up as too stiff in the joints."

From Ed Davis, IX, in Waterbury, Conn.: "My activities are two: (1) Class Agent, of which everybody already knows too much; (2) still on an historical research on the earliest product history of Scovill Manufacturing Co. Hopefully, this year may see the end, or nearly so, of the work at the shop, with a large documentary removal to my home to occupy me for another year or more. In a concern that began in 1802, this offers quite a range for investigation. Old documents, old order books, old letters, and quite a lot of old relics, let alone apparatus and personnel. It is fine, of course. I put in mornings on it five days a week and do the family shopping on the way home. Class Agent work takes afternoons and evenings once in a while. That is fine, too, for it brings in notes from good fellows far and wide. Long may it wave."

From Willard Dow, IX, Cohasset: "At the Midwinter Meeting I sat at a table with some 1902 men, one of whom said he looked in now and again on Ed Belcher in Portland, Me., 'that wonderful repairer and connoisseur of ancient clocks.' He said that it was always a delightful experience and he planned to see Ed again this spring. This guy said one had to sidle in edgewise because of so many clocks." Ed Beckwith, V, Garrison, N. Y. simply notes "Retired." Austin Hyde, X, Damascus, Va., "Nothing of class interest." Joseph Gund, I, Freeport, Ill., says he is a municipal and highway contractor.

Keep in mind our reunion in 1959 and let Bob Derby know if you have any helpful ideas. Let's all back up Ed Davis in his drive for the Alumni Fund. He deserves our help and gratitude for all of his hard work. On April 9 it is still winter in New Hampshire with a foot of snow on the ground. We hope that spring is on the way. — **THEODORE H. TAFT, Secretary**, Box 124, Jaffrey, N. H. **WILLARD W. DOW, Assistant Secretary**, 78 Elm Street, Cohasset, Mass.

1902

I regret to have to record the death of Jason Mixer on March 17, 1958. The following taken from the *Boston Globe* sums up well his life and professional career: "Dr. William Jason Mixer, 77, world renowned neurosurgeon, died yesterday morning at his home, 280 Beacon Street. He was credited with the development of surgery for the ruptured intravertebral disc.

"Dr. Mixer was born in Vienna, Austria, December 5, 1880. His father, the late Dr. Samuel Mixer of Boston, was studying in Vienna at the time. His mother was Wilhelmina Galloupe of Boston. Dr. Mixer was graduated from Massachusetts Institute of Technology in 1902 and from Harvard Medical School in 1906. He was an intern at Massachusetts General Hospital in 1906-07, beginning an association with the hospital of more than a half century.

"He served in France with the Army Medical Corps, 1917-1919. In World War II he was senior consultant in neurosurgery to the surgeon general of the Army. In 1933 he became chief of neurosurgery at the M.G.H., serving until 1941 when he was retired; then he was acting chief dur-

ing the war years, 1941-1946. Since then he has been on the board of consultation. Dr. Mixer was a member of the Corporation of M.I.T. from 1944 to 1949. He was a member of the vestry of Trinity Church from 1919 to 1958. He was senior warden, 1949-1953.

"In 1953 the surgeon retired from active practice, and he and Mrs. Mixer made their home in Woods Hole and Hardwick. He was a member of many societies, including the American Medical Association, the American Surgical Association, the American College of Surgeons, Society of Neurological Surgeons, the American Neurological Association, the Harvey Cushing Society, and the New England Surgical Society. Last fall the Mixer Laboratories for Neurological Research were dedicated at Massachusetts General Hospital, honoring the neurosurgeon, his father and brother.

"Dr. Mixer leaves his wife, the former Dorothy Fay of Boston; three sons, William Jason Mixer, Jr., of Dedham, Henry F. Mixer of Milwaukee, and David M. Mixer of Darien, Conn.; and a daughter, Mrs. H. Thomas Ballantine, Jr., of Dedham. He also leaves three brothers: Dr. Charles G. Mixer and Samuel Mixer, both of Boston; and George Mixer of Hardwick."

The 27th annual dinner of the Engineers Society of Pennsylvania held on March 25, 1958, at Harrisburg, Pa., was dedicated to Farley Gannett, who had been nominated for honorary membership in the Society by the Past Presidents Committee on January 7. At this dinner the honorary membership was conferred as a posthumous honor. Honorary membership was also given another classmate, Frank A. Robbins, Jr., former general manager of the Bethlehem Steel Co. of Steelton, Pa., retired in 1946 after 44 years of service to become State Secretary of Public Assistance in Governor Duff's cabinet from 1947-1951. He is now busy in civic affairs.

As this is being written in April when everyone is tax conscious, it is interesting to note that William R. Lewis is busy in Foxboro, Mass., as a member of the Board of Assessors trying to work out a just tax rate for his fellow citizens. — **BURTON G. PHILBRICK, Secretary**, 18 Ocean Avenue, Salem, Mass.

1903

Under date of March 21, your Secretary received a note from Raymond E. Hanson, V, stating that he was undergoing medical treatment and could not make commitment for the future, much as he would like to attend the class reunion. Ten days later, notice of his death on March 28 was received. He had been engaged in photographic work for many years and numerous views which he had furnished have appeared in the pages and on the cover of *The Technology Review*. Many of his photographs have been exhibited in all parts of the world, and he has written widely on photography. Long a resident of Melrose, Mass., he was a member of the Boston Camera Club; also a member of the Boston Young Men's Christian Union since 1918. Highly ethical and religious in the broad sense, he was

also much interested in history (especially French) and a genial soul among his close acquaintances. He leaves a niece, Mrs. Deborah St. Vincent, and a sister-in-law, Mrs. Alice G. Hanson, both of Melrose.

Another reunion questionnaire elicited the information that Miss A. Mildred Barber had died on May 4, 1957, in Ashburnham, Mass. From further inquiry it was learned that she was born June 2, 1879 at Wallingford, Conn. Her mother having died soon after her birth, she was adopted by her mother's sister and her husband, Mr. and Mrs. Clarence Brown of Wallingford, Conn., and brought up as one of their own family. She graduated from Smith College in 1902 and took graduate work in household economics at Simmons College and, during the second term in biology, at M.I.T., Class of '03.

Following her year at Simmons and M.I.T., she took a position as assistant to the superintendent of restaurants of the Women's Industrial Union, eventually becoming superintendent. In the spring of 1916 she became manager of the Women's City Club, 40 Beacon Street, Boston, where she remained for 12 years. Then she went to the Northfield School for Girls as assistant to the purchasing agent in food matters. She remained at Northfield until her retirement about 1944. Her generous nature, high standards, and fine integrity made her greatly esteemed and respected. Our thanks are due Mrs. William D. Miller of Ashburnham for her cooperation.

I. F. Atwood, returning from an extended winter tour, reports: "We had a wonderful trip to South America. Covered a great deal in three weeks (all by air)." We hope to hear more of his experiences. Through the generosity of certain members of the Class, the expenses of our 50th reunion were amply underwritten and our 55th provided for, although no class dues have been received recently. However, the Treasurer would welcome individual contributions to meet current expenses and have something over for our 60th. — F. A. EUSTIS, *Treasurer*, 131 State Street, Boston 9, Mass. LEROY B. GOULD, *Secretary*, 36 Oxford Road, Newton Centre 59, Mass.

1904

If anyone wants to see the months go whizzing by, he should get a job as class notes editor. Every few days a notice comes from The Review Office that the 15th of another month is next week and another deadline for notes is just around the corner. You rush over on the appointed day, or possibly with apologies a day late, with a batch of obituaries and possibly a letter or two from classmates who have found a cure for writer's cramp. The copy is graciously accepted, and then we all wait two months before the results of our labors appear in print. In the meantime those who were writing from Florida or the West Indies about escaping a northern winter are in Maine or on Cape Cod trying to escape the heat and are wondering why the notes editors don't serve up some up-to-date news.

There are just two items in this batch, and we are glad to say neither is an obituary. The first is a letter from Maynard

Holcombe reporting on the Florida contingent. We were glad to get it and are sure you will find it of interest. It was dated March 27. It goes to The Review Office April 15. You will read it sometime in June.

"You will be glad to know that our '04 gathering at Winter Haven this year came off with no casualties, though only three couples were present — the Palmers, the Newells and yours truly. A deluge kept the Coupes from driving from Saint Petersburg Beach, and floods and illness isolated the Sheafes at Lake Apopka. The Newells reported on their trip to Portugal and Spain, from which they returned before Christmas after shivering their way over most of those interesting countries and gathering impressions of Moorish art and architecture for the benefit of their 18 grandchildren; and a letter from Fred Pierce (who winters in Saint Petersburg) saying he 'don't wanna attend' any more reunions caused considerable discussion, as reunions are not what they used to be with so many necrologies each time we meet.

"John Marston, who has lived in Saint Petersburg some two years after retiring from Phelps-Dodge, has recently gone through a successful operation for cataracts and will soon be in circulation again.

"Despite the unusually low temperatures that beset parts of Florida the past winter, there has not been too much sickness; and we have played a lot of golf around Saint Petersburg. The shuffleboard courts have been busy also — a sport not peculiar to octogenarians and much favored here by everyone who enjoys being in the sunshine. But don't wait until you can't even hobble before trying it unless you prefer to be a spectator; for the latter we also have horse racing, dog racing, yacht racing and baseball.

"So much for the Florida West Coast; you will have to get P. M. Smith at Jacksonville Beach or Mark Magnuson at Lantana to report for the East Coast."

The second item came from a card sent by the Currier Langs from Saint Thomas, Virgin Islands. They have been doing some island hopping in the West Indies by air and found Saint Thomas so entrancing that they have bought some land and plan to build a winter home there. We hope they live to enjoy many winters in this delightful spot.

If you read these notes before Alumni Day, plan to join us then.

P.S. We spoke too soon on obituaries. Word has just come that James R. Baldwin passed away December 24, 1957, at Andover, Mass. No details available.

These notes were duly delivered to The Review Office two days ago. Today Charlie Haynes dropped in to see us with some sad news: viz., that Mrs. Haynes passed away recently as the result of a stroke. She was among the wives present at our 50th reunion and will therefore be especially missed by those who also enjoyed that occasion. Charlie seemed quite lonesome, and his plans for the future are not fully crystallized. In the meantime, he has the deep sympathy of all members of the Class. — EUGENE H. RUSSELL, JR., *Treasurer*, 82 Devonshire Street, Boston, Mass. CARLE R. HAYWARD, *President and Acting Secretary*, M.I.T., Cambridge 39, Mass.

Win Taylor, I, in a recent letter explains why news for The Review is so hard to get. He says: "Engineers of our vintage are a retiring lot." I'll buy that, but I would expand on the words engineers and vintage, because my daughter has been class secretary of the class of '53, University of New Hampshire, for a year; and she cries on my shoulder because in her class — liberal arts, farming, engineering — men and women of a considerably younger vintage have to be prodded and prodded without very satisfactory results. Win says: "To date, I have had a happy, active 10 years of retirement in good health. I have shuttled back and forth over this country in car or plane visiting my kin in California, Florida, New England, Canada and the Middle West. The rest of the time I stay put in northern New Jersey, where most of my eleven grandchildren live. Golf is still my prime recreation. With electric caddy cars now available on most courses, it would seem that one could enjoy the sport as long as he can stand on his feet to swing a club."

I reported in the last issue the birth of a great-grandson to the Ben Lindslys. Hub Kenway asks, "Is this the first great-grandson of the Class?" I very much doubt it; but if anyone will furnish any statistics of this nature, I'll gladly keep score. Maybe I'll brag a bit if I stick around about a dozen years more.

Charlie Smart, II, paid me a visit recently and went to lunch with me at the M.I.T. daily luncheon table at Thompson's Spa. He certainly looked hale and hearty. He had previously written a report of some of his recent doings, and I quote: "Last April Mrs. Smart and I went to England on the *Queen Mary*. We stayed in London a few days, during which time I went to York to visit an instrument firm whom we partially represent in the U. S. Then we went to Amsterdam, where we stayed a week. The tulips were still blooming and were wonderful, though we were told that they were at their height the week before we arrived. We went on bus trips every day; and towards the end of the stay, Mrs. Smart developed trouble with her back. However, we went to Oslo for a few days but gave up our planned trip to Stockholm. We flew to Copenhagen for a few days; then to Munich, where we were having some instruments made to sell in the U. S. We took the train from Munich to Rotterdam, a 12 hour trip, but well worth it, for we traveled near the Rhine for over 50 miles. At Rotterdam we boarded the *Nieuw Amsterdam* and arrived back in New York on April 20.

"Mrs. Smart has returned from the hospital where she had been for 10 weeks. Ulcers developed in December from spider bites on both ankles which occurred last September. We believe that she is through the worst of it. I am more or less retired. I am chairman of the board of W. and L. E. Gurley (I have been with them 38 years). I am president of the Institute of Management Affairs, Inc., a local concern which specializes in labor relations and kindred subjects. Then I am director of the American Tool and Machine Company in Hyde Park, Mass.; a

director of the Y.M.C.A.; and a director and second vice-president of the Troy Chamber of Commerce. So you can see that I am more or less retired."

So far there have been no demands for a 53d reunion, but if there is a real desire of a sufficient number to get together it can undoubtedly be arranged for the latter part of June.

The only other bit of news concerns the death of Charlie Leavitt, XIII, which occurred on March 4, 1958. While he had spent most of his life not far from Boston, he had very few class contacts and we knew so little about his work and vocations that I am quoting from a newspaper clipping: "Charles E. Leavitt, 75, of 30 Broad Street, Weymouth, collapsed and died of an apparent heart attack yesterday, soon after his auto was involved in a collision with another car in Quincy Point. He was pronounced dead on arrival at Quincy City Hospital. Mr. Leavitt was born in Weymouth and had also resided in Norwell for 28 years. He returned to live in the house where he was born in Weymouth last year. A graduate of the Weymouth Schools, he received his degree from M.I.T. in 1905. After graduation he taught for four years at M.I.T. and then worked as an architect at the Brooklyn, N. Y., Navy Yard until he retired at the age of 38. A 32nd degree Mason, he received his 50-year pin a year ago. He held life membership in many Masonic Lodges and organizations including: Orphans Hope Masonic Lodge of East Weymouth; Penalph Royal Arch Chapter of East Weymouth; South Shore Commandery; Knights Templars of East Weymouth; Scottish Rite, Valley of Brooklyn, N. Y.; Long Island Grotto of Brooklyn; Brooklyn Council; and Kismet Temple of Brooklyn. Mr. Leavitt was an honorary member of Taleb Grotto of Quincy and an active member of the Taleb Band. He also held membership in the Aleppo Temple in Boston. He is survived by his wife, Mrs. Maude A. (Godfrey) Leavitt; a son, Walter Thornton Leavitt of Weymouth; a daughter, Mrs. Vincent Wormald of East Weymouth; three grandchildren; and four great-grandchildren."

This issue will reach you approximately two weeks before Alumni Day, June 16. Remember what a fine showing we had last year and what a good time? Let's top it in 1958. — FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin Street, Boston, Mass. GILBERT S. TOWER, *Assistant Secretary*, 36 North Main Street, Cohasset, Mass.

1906

Most of the news this month is sad news. In March we lost three classmates. Charles Henry Shapleigh, I (S.B. '08), died suddenly on March 15 in Charlottesville, Va.; and his son-in-law, Foster B. Gresham, promptly sent Floid Fuller a detailed letter which Floid immediately forwarded to me. Charles had had a coronary attack on February 26 and was rushed to the hospital. Foster said: "He seemed to be doing so well that we never gave a thought to his not recovering. . . . The Shapleighs had recently attended the convention of the Virginia Association of Surveyors and were planning to go to the national convention the latter part of this

month. They were enjoying life together as much as at any time since I have known them, if not more so. Both of you had contributed to their happiness by the fun you had with them in Boston and by your visit with them last year." Floid wrote: "It was a terrible shock, as he seemed so active and well when we visited him about a year ago. At that time he told us about his work as a town and county surveyor and some of the interesting jobs he had had finding boundary lines that went back for many years. It really seemed as if he was a sort of detective with only a few clues."

Charles was born July 21, 1884, at Williamsport, Pa. His home address was Lock Haven where he attended the Central State Normal School before entering with us and taking part in Tech Show three years; serving as treasurer and then president of the Penn Club; and belonging to the Civil Engineering Society. He was taking Course II sophomore year, then changed to Civil Engineering as a special. During part of '06-'07 he was assistant engineering manager of Works Department of the Alabama and Vicksburg Railway and another railway, then he came back for his degree with '08 and returned to his railroad job. For a while in 1910-'11 he was chief engineer, River, Rail, and Harbor Construction Co., in charge of work for protection of river banks, followed by a stretch as general manager of the Pennamich Lumber Company and until 1917 as assistant engineering manager of the Works Department, New Orleans and New England Railway, and assistant to the president of that system. Charles has related how he was turned down for the Army on account of his eyes and started running a dairy and fruit farm — Cedar Gate Farm in Eastham, Va. — where, as he said, he made a living until the depression. He continued to operate it until the early Forties while he was with the Virginia State Commission on Conservation and Development and the State Planning Board. For the past 16 years or so he has been a practicing civil engineer in and around Charlottesville. In 1915 Charles married Florence M. Smith of New Orleans (who also came to the reunion) and they have a daughter, Merrill I believe (Mrs. Gresham), and a grandson, Douglas. Mrs. Gresham graduated from State Teachers College at Fredericksburg, and in 1936 Charles wrote: "She seems to have a mathematical mind," so Douglas will no doubt have splendid help with his homework!

In March the New York papers carried obituaries for Ray Stevens Hoyt, 75, who died on the 16th in Madison, N. J., after a short illness. His home town was Bellevue, Neb., and he was with us only senior year while he was doing graduate work in Course VI, having obtained a B.S. degree in Electrical Engineering at the University of Wisconsin. He later obtained an M.S. at Princeton and entered the employ of American Telephone and Telegraph Co., retiring in 1947 to Chatham, N. J. His career was entirely in research, first in the Department of Development and Research and then, when it was set up, with the Bell Laboratories. Holder of 21 patents, he was a contributor to profes-

sional journals and made many valuable contributions to the theory of telephone transmission lines and associated apparatus, as well as cross talk and static interference. Surviving are his wife, Anna Weldon Hoyt, and a daughter, Mrs. Donald Hay of Princeton.

Through the thoughtful co-operation of J. N. Stephenson, X, '09, we received a report of the death on March 26 of LeRoy Holton Shipman, X, at Liverpool, Nova Scotia. J. N. is editor-in-chief of the *Pulp and Paper Magazine* of Canada, and he enclosed with his letter a copy of the obituary notice for his magazine, from which and our records we have these details. Roy was born October 16, 1881, in Winooski, Vt., just above Burlington, and prepared at Burlington High School. After obtaining his degree at the University of Vermont, he joined us junior year, was a first tenor in the Glee Club, and graduated in Course X, his thesis being "Corrosion of Iron and Steel as Affected by Their Constituents." For the first 10 years or so he was with the Burgess Sulphite Fibre Co., in Berlin, N. H., becoming head of the Bleaching and Laboratory Department; then joined the Spanish River Pulp and Paper Mills at Sault Sainte Marie, Ontario, as superintendent of the General Research Department and rose to the position of assistant to the manager and later of purchasing agent. He continued in the latter position with the Abitibi Power and Paper Co. in Montreal after the amalgamation in 1928. In 1934 Roy became assistant sales manager of Mersey Paper Co. in Liverpool, retiring around 1955. He is survived by his wife, Mary, and a son, Holton B. of New Orleans. Mr. Stephenson said he had known Roy for 40 years and regretted the passing of a good friend and coworker in the Technical Section of the Canadian Pulp and Paper Association, of which, in 1920, Roy Shipman became the third chairman.

One address change for your Golden Anniversary directory. Louis H. Tripp, II, is still in Westport, Mass., but has moved to 202 Hix Bridge Road, R.D. #1. I hope to give you some details in later notes of Louis' career, which I believe was entirely in federal service in Washington and as a major in World War I. — EDWARD B. ROWE, *Secretary-Treasurer*, 11 Cushing Road, Wellesley Hills 81, Mass.

1907

In mid-March Donald Severance, *Secretary-Treasurer* of the Alumni Association, asked me to be chairman of a committee to prepare resolutions on the death of George Crane. At my suggestion Phil Walker, our *Class Treasurer*, and Gardner (Tom) Gould were appointed as members of this committee. The following resolutions were prepared and read by Tom Gould at the Alumni Council meeting on April 28, and they were unanimously adopted. The original copy was sent to Mrs. Crane; a copy is bound into the perpetual minutes of record of the Alumni Association; another copy is in the records of our Class; and copies have been sent to all members of the Alumni Council. The resolutions are as follows:

George Arthur Crane, 1885-1958 — In view of the death, on March 6, 1958, of

George A. Crane, M.I.T. Class of 1907, who was the class representative on the M.I.T. Alumni Council from June 26, 1944, until the time of his death, we deem it fitting to take official note of his passing and to make official recognition of his service rendered to the Institute through his membership on the Council.

At the meeting of the M.I.T. Alumni Council held on April 28, 1958, the following resolution was unanimously adopted: **RESOLVED:** First, that in the death of George A. Crane the Massachusetts Institute of Technology and the Class of 1907 have lost a loyal and faithful Alumnus, whose splendid character as a true gentleman, and ability and integrity as an engineer, and unselfish devotion to duty and to his friends and family made him respected and beloved by all who knew him.

Second, that the original copy of these resolutions be given to his widow, Mrs. Myrtle Coops Crane.

And finally, that copies be incorporated in the records of the Alumni Council of Massachusetts Institute of Technology and of the Class of 1907.

Committee on Resolutions on George A. Crane, as appointed by Donald P. Severance, Secretary-Treasurer of the Alumni Association: (Signed) Gardner S. Gould '07, Philip B. Walker '07, Bryant Nichols '07, Chairman.

Tom Gould has been appointed as '07 representative on the Alumni Council to succeed George Crane. In the list of deceased members of '07 that I sent to you last fall, I stated that neither the Alumni Office nor I knew whether or not Lloyd R. Fredendall was living. On March 15 Howard Marvin '07 thoughtfully wrote to me enclosing an official document from the Department of the Army, office of the Adjutant General, at Washington, stating that the address of our classmate, who was with us at Tech for only one year, is Lieutenant General Lloyd R. Fredendall, U. S. Army Retired, 215 Coast Boulevard, La Jolla, Calif. Lloyd's cousin was the roommate of Howard's sister while she was at Wellesley and Howard knew Lloyd better than any other man in our Class. Lloyd's career in the Army in service overseas during the 1940's was brilliant, and he was considered to be probably the top United States Army infantry officer at the time.

On March 13 Frank MacGregor wrote to me as follows, from his winter home in Tryon, N. C.: "Had quite a surprise yesterday afternoon. Was at a friend's house for a little social affair and who should I run into but Herb Eisenhart '07 and his wife. Had not seen him for 50 years. For the past three winters they have rented a house here belonging to one of the inns, but our paths had not crossed before. M. E. MacGregor and his wife stopped over with us on an extended motor trip during February in the South and Florida." Early in April Phelps Swett, who is president of the National Bank of Middlebury at Middlebury, Vt., sent me some photographs of classmates taken in 1907 for me to add to our class archives. That was a thoughtful deed. If any of the rest of you have such photographs and are willing to part with them, I'll be grateful if you will send them to me. Ed Lee, who

is retired from active professional work, now has the address, P.O. Box 424, Homestead, Fla.

Possibly some of you may remember a Marion G. Boland who was associated with our Class, although not a graduate. She received her degree at University of Maine in 1902, studied at Tech, and received a master's degree at Clark University in Worcester, Mass., in 1910. She taught modern languages at St. Elizabeth's College in New Jersey, Centenary College in Louisiana, Adrian College in Michigan, and at Washington College, Chestertown, Md., where she became Dean of Women. She died in Worcester on March 21, 1958.

You may remember that from time to time during the past years I have published in *The Review* excerpts from reports that John Frank has sent to me regarding various travel trips that he has taken. On March 24 I received another report saying that he and Mrs. Frank had just returned from a three weeks' trip to Jamaica, where they were guests of Sam Marx '07 and his wife, at a beautiful house complete with swimming pool, sailboat, and servants, that Sam had rented for the season at Montego Bay. John wrote, in part: "We stopped overnight at Port Antonio, the principal banana port, and while there rafted on the Rio Grande River. This is an exciting experience. The rafts are about 20 feet long, 4 feet wide, made of bamboo, with a seat for two, and handled by a skilful native who poles the raft over a seven-mile trip through many rapids. . . . Mrs. Frank spent many pleasant hours sailing with Mrs. Marx, and I spent equally pleasant hours watercolor painting." John and Sam attended their 55th reunion at Exeter Academy late in May, if their March plans were carried out.

Late in March Leverett Cutten thoughtfully sent to me a copy of the October 30, 1957, issue of the *Dalhousie Gazette*, the college newspaper published by Dalhousie University at Halifax, Nova Scotia, which had been sent to him by a relative. This contained information regarding our internationally-known classmate, Clarence Howe, interestingly written, and some of it new to me, that I pass on to you, quoting from the publication: "Today is a great day for Dalhousie with the arrival this morning of Lady Dunn, wife of Sir James Dunn, the University's greatest modern benefactor, and the Right Honorable C. D. Howe, our new Chancellor, for a turning-of-the-sod ceremony for the Sir James Dunn Science Building. Mrs. Howe is with her husband. . . . For the first time in the history of Dalhousie University, a Chancellor has been appointed. Indeed, the Board of Governors has chosen one of the most dynamic personalities Canada has ever seen to fill this position.

"The Right Honorable Clarence Decatur Howe has emblazoned his name on the annals of Canadian history. During his 20 years of political service he has markedly changed the face of our nation. Truly, this man may be called the 'Architect of Modern Canada.'

"In 1908 George Swain, an engineering professor at M.I.T., received a fateful letter from Dalhousie University in Halifax,

Nova Scotia. The letter requested that Swain forward his best available graduate to fill a full professorship in civil engineering at Dalhousie. The salary attached to the position was \$2,000 a year. The letter was relayed to Clarence Decatur Howe and James Madison Barker. Jobs were scarce in the U.S. at that time and this was an excellent opportunity. The two young men read the letter, looked silently at one another, tossed a coin, and Howe won. Howe's comment at the time was: 'I'll go up to Canada for a couple of years until things get back to normal down here.' Little did we realize that he had embarked on a career that was to attain heights few men ever approach.

"Thus at 22 years of age, Howe, the youngest full professor ever to serve on this University staff, arrived on the Dal campus. Being broke on his arrival, he found it necessary to borrow \$100 from the university treasurer to tide him over until his first check. Little did he realize that at the age of 40 he would be a millionaire.

"The teaching methods used by Howe were very new to Dalhousie. As his engineering students were only a year or two younger than he was himself, Howe treated them as colleagues. During those pre-World War I days the expansion of railways was booming in Canada. In line with this new sensation, Howe's engineering class camped out for many weeks during the academic year building numerous imaginary railroads throughout Nova Scotia.

"After serving five years on Dalhousie's faculty, Howe left to become a prairie grain elevator engineer. This transfer was due largely to Robert Magill, a Dalhousie theologian and economist who became head of the Board of Grain Commissioners, and who was authorized to build the grain elevators which Canada badly needed at the time. He was acquainted with only one engineer, his colleague, Howe, in Halifax; and he offered him the job at \$5,000 a year. At that time Howe said, 'I know nothing of grain elevators; I've never even seen one!' To this statement, Magill replied, 'You're the only engineer I know.' In the year 1916 the college professor had established his own company, C. D. Howe and Co., Consulting Engineers, for designing, supervising, and constructing pulp mills, grain elevators, and many heavy engineering structures valued at many millions of dollars. In 1935 Howe was elected to the House of Commons as the Liberal member representing the constituency of Port Arthur, Ontario.

"In the 50th year of his life, a man who was not a trained politician or parliamentarian entered a field in which he was destined to achieve remarkable accomplishments. In the year of his being elected to Parliament, Howe was appointed Minister of Railways and Canals and Minister of Marine. In 1936 the two departments merged into the Department of Transport under his able leadership. It was apparent to Howe that the problem of binding the Canadian provinces together was an engineering one whose ultimate solution could be effected only through political action.

"His task defined, Howe began to

work. The great public companies which he founded and which serve as the milestones of his ministerial career are the tangible expressions of the achievement of his goal. Under his capable guidance the Canadian National Railways were reorganized, the National Harbours Board was inaugurated; he organized the operational end ground service, for Canada's first trans-continental air system and thus founded T.C.A. Here at work was the man whom the late MacKenzie King called 'the greatest organizer of his time.' Here was a great executive manipulating forces that were to make Canada great. In April of 1940, Howe was appointed Minister of Munitions and Supply. At that time Canada's war potential was negligible. When the war had ended, however, Howe had helped to raise the country to a position that was fourth among the Allied producers. He had not only equipped the Canadian armed forces but had also given away to our allies 'more material per capita than any member of the Alliance — not excluding the United States.'

"Howe has been called one of the toughest politicians that Canada has ever seen. His five terms in Parliament, during which he has held eight cabinet posts, have been turbulent ones.

"He was indeed an embattled politician. His single-mindedness, his will to get things done, his scorn of red tape may have caused him to become impatient with the cumbersome procedures of political administration. He gave his opposition a very rough time, this being very evident during the pipe-line debate which was won after gigantic struggles with his fellow Parliamentarians.

"Howe, however, must not be thought of only as the rugged, hard-working politician. He is a bridge player of high calibre, an enthusiastic salmon fisherman. He also enjoys golf, playing lustily, if not too successfully, with C. Jack MacKenzie, one of his engineering students at Dalhousie, who was the wartime president of the National Research Council and later became president of Atomic Energy of Canada.

"To Dalhousie, then, comes her first Chancellor, C. D. Howe, a man of 'unimpeachable personal integrity,' a man who has helped shape the destiny of Canada, a great engineer. Our Chancellor's ability has been recognized by 14 universities in Canada, the United States and Australia, who have bestowed honorary degrees upon him; fittingly, Dalhousie was the first to honor him by conferring on him an Honorary Doctor of Laws in 1939. Since that time this university has given his name to a Chair of Engineering, which was endowed in 1952 by a number of his friends and admirers throughout Canada.

"Dalhousie can only benefit from the remarkable ability and wisdom of this great Canadian. In accepting the chancellorship of Dalhousie, Howe said: 'During my term as Chancellor, I hope that I will be able to give some leadership towards solving the problem that faces all Canadian universities, that of expanding facilities to keep pace with the rapid growth in student registration. That will be my objective. The high educational standards that are traditional at Dalhousie must be maintained at all costs.'"

In closing these notes, let me urge you to attend the events of M.I.T. Alumni Day, June 16, at Cambridge. If you have not already made reservations for luncheon, afternoon, evening banquet, and Boston Pops Orchestra Concert, telephone or telegraph to Alumni Association at M.I.T., Cambridge, Mass., and they will undoubtedly take care of you. — BRYANT NICHOLS, *President* and *Secretary*, 23 Leiland Road, Whitinsville, Mass. PHILIP B. WALKER, *Assistant Secretary* and *Treasurer*, 18 Summit Street, Whitinsville, Mass.

1908

LAST CALL! June 13 to 16 we celebrate our 50th. Have you signed up?

Friday morning, June 13, at 10:00 A.M. we take part in the commencement exercises of the Class of 1958 in Rockwell and are then guests of Acting President Julius A. Stratton at lunch in Du Pont Court. After lunch we shall be en route to Haverhill, Mass., on the Cape, and Snow Inn for a New England shore dinner. Saturday and Sunday you may swim, sail, fish, golf, go sight-seeing, or just relax and talk over our "palmy" days. Most of us will leave after Sunday dinner for Boston.

Monday, June 16, is Alumni Day at Cambridge; and as the 50th year Class we will be seated at a real table at the luncheon in Du Pont Court and be served, instead of standing in line for the buffet as we have done for so many years. Following the cocktail hour on the green comes the banquet in Rockwell, when we present our 50th Year Class Gift to the Institute. After the banquet we will be entertained by Arthur Fiedler and his Boston Pops Orchestra in Kresge Auditorium. Sounds good, doesn't it? So don't miss it — remember, you will never have another 50th.

We are sorry to report the death of Oak L. Throckmorton at his home in Wichita, Kansas, on September 20, 1957. Oak had been ill for several years.

Please send us some news of yourself or classmates. We would certainly appreciate it. — H. LESTON CARTER, *Secretary*, 14 Roslyn Road, Waban 68, Mass. LESLIE B. ELLIS, *Treasurer* and *Reunion Chairman*, 230 Melrose Street, Melrose 76, Mass.

1909

We have reported several of Molly's (XI) trips to Europe and the Far East in connection with power developments and other consulting work. Recently he has expanded his activities to South America visiting Bogotá, Colombia, and Buenos Aires, Argentina, both in connection with professional engagements.

We have received a press release from the office of Tom Desmond, I, announcing that he will not run for re-election this year to the New York State Senate. He has been a member of the Senate continuously for the past 28 years, longer than any present member of the New York State legislature. "Although I am grateful for the expressed desire of so many people to have me serve again in the legislature," Tom said, "and I have many pleasant Albany memories, I have definitely decided not to seek re-election this

year. This announcement is being made now, following the recent adjournment of the legislature, in order to give ample time for the people of the Orange-Rockland Senatorial District to select my successor. It has been an honor and privilege to have been chosen for 28 successive years to represent in the New York State Senate the district in which I was born. There has been much satisfaction in what good I was able to accomplish. And even though I was not able to accomplish as much as I might have liked, nevertheless I am glad that it was possible for me to leave business at an early age, enter politics, and devote so many years to government service. The fact that New York State is one of the only three remaining states still with the old convention system — where a few political leaders can and do control the nominations for governor, United States senator, and other statewide officers and there is no primary for an appeal to the public from their decisions — made it harder for an independent like myself. But I am happy in the expectation that now I shall have more time for useful work in connection with educational and philanthropic duties, and possibly other public service."

Tom retired from his former large engineering and construction work business in 1930 and was elected that fall to the State Senate. As we have recorded in these notes from time to time, Tom has sponsored much forward-looking legislation and, since its inception, has been chairman of the New York State Legislative Committee on Problems of the Aging. The release has appeared in several newspapers such as the *New York Herald Tribune* and *New York Times* accompanied by Tom's picture. The Class congratulates him on his many years of distinguished public service.

Art Shaw, I, sent us a letter from Gulf Ranch on Longboat Key at Sarasota, Fla., enclosing a clipping also telling of Tom's decision not to run for re-election as state senator. During the past few years Art and Betty have visited Florida this time of year. He states: "We have been here since the middle of February, having left home the 6th, just ahead of the long series of storms which have plagued you this past winter. We plan to leave for home April 15, driving by easy stages with visits en route as the spirit moves, reaching Aurburndale about the 21st. We have enjoyed a relaxing 'vacation' even though until recently the weather has been cooler and more cloudy than usual. The Gulf is about 72 degrees now, so we can bathe with comfort on the white sand beach whenever we feel like it."

Notice has been received of the marriage on February 16 of Mrs. Katherine Adams Birch of Hancock, N. H., to Earl Russell Hamilton, XIV, at her home on Norway Hill. The bride is a graduate of Abbot Academy and before coming to Hancock resided in Chappaqua, N. Y. Earle, now retired, was formerly with the New England Power and Service Company and later with the Nashua Gas Service Company. He moved to Hancock from Needham, Mass., about five years ago.

The Class will be pleased to learn that at the town meeting at Orleans, Mass., where Jim Critchett lived, everyone stood

while a fine article about him was read. It was then placed in the permanent files of the town. The board of trustees of the Cape Cod Hospital did the same at their board meeting.

In the last Review we reported the death of William F. Gilman, VI. We have since received several clippings telling more of his career. He was born in Mount Vernon, Maine, in 1883, and from 1906 to 1907 was with the Colon Electrical and Ice Supply Company in Panama; he then took a position with the Canal Commission. He later worked for the Insull properties in the West and for several years he was in China for the General Electric Company installing electrical power equipment in Hong Kong. He returned in 1932 and became vice-president of the Provincetown Light and Power Company until its merger with the Cape and Vineyard Company, retiring in 1955. There are no immediate survivors. Don't forget Alumni Day, June 16. This is the last one before our 50th and gives us a grand chance to have a preliminary class reunion. We are looking forward to a large '09 gathering. And don't forget the girls! — CHESTER L. DAWES, *Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. GEORGE E. WALLIS, *Assistant Secretary*, Wenham, Mass.

1910

It is with sorrow that I have to report the passing of Frank E. Hodges on March 10, 1958. There was no further information in the report, and I am unable to give any information other than he had retired from business more than five years ago.

Ralph Horne received the following publicity in the *Malden, Mass., News*: "Ralph W. Horne, trustee of the library since 1948, and civil engineer, is president of Fay, Spofford and Thorndike, Inc., consulting engineers, in Boston. Mr. Horne has lived in Malden all his life and is a graduate of Malden High School and Massachusetts Institute of Technology."

Carroll Benton writes the following, giving me information about New York City class luncheons. I hope to attend at least one before the summer and I hope other classmates will make it a point to attend if they are in New York City on the Wednesday after the third Monday of each month. "Thought you might be interested in hearing about our class luncheons. As you know, the club moved its headquarters to the Hotel Biltmore last fall; and since that time we have been holding our monthly luncheons there on the Wednesday after the third Monday in the month. In other words, the luncheon is on the Wednesday of the third full week of the month. We generally have between six and ten persons present. Yesterday there were, besides Yours Truly: Al Hague, Gordon Holbrook, George Magee, Carroll Shaw, Erford Potter, and Henry Schleicher. Ray Jacoby had a business luncheon so couldn't make it. Fred Dewey, who generally attends, dropped me a line saying he expected to be in the Bahamas then; and Jim Tripp, who has just returned from a business trip around the world, told me that he was very busy getting ready for a business trip to London the following day (March 20). Larry Hem-

menway couldn't make it. So you see, if we can get anywhere from six to ten out we are doing pretty well, I think. I think the club made a good move in changing to the Biltmore. I think the other fellows think so, too. Any time that any of the 1910 fellows are in New York on Wednesday of the third week in the month they will be most welcome to join us at luncheon at 12:30. Hope this finds you and yours in good health. This is supposed (by the calendar) to be the first day of spring, but it doesn't look much like it at the moment. Snowing, and a miserable sort of day. Mrs. Benton and I are planning a short trip to the Caribbean early next month."

Hal Manson and I had a very pleasant evening together at the March Alumni Council Meeting. Hal had been in Florida, but the weather was such that he could not get in the golf he had expected to.

It is with sorrow that I have to announce that I just received a notice on the passing of Everett M. H. Follansbee on April 5, 1958. No further information was received at this time, but further details will be given in the next issue. — HERBERT S. CLEVERDON, *Secretary*, 120 Tremont Street, Boston, Mass.

1911

Our loyal, popular, bachelor architect — William Dewey Foster — was stricken at his Washington, D.C., office on the afternoon of April 3 and died of a heart attack. A prominent Washington architect and leader in the fight against the Capitol east front alteration plans, Bill was an authority on architectural restoration and also designed many public buildings and private homes. He was the architect for the new State Department building, the Weather Bureau and the Friendship residential development in Georgetown. He also designed several post offices throughout the country and restored the Octagon House, President Madison's temporary White House, at 18th Street and New York Avenue, Northwest.

Born in Kirksville, Mo., on New Year's Day in 1890, Bill — affectionately called Fuzzy by many — prepared at Technical High School, Springfield, Mass., and was active on the campus during our four years at the Institute. He was a member of Phi Kappa Sigma fraternity, the Walker Club, and the Architectural Society, being treasurer in his third year and president as a senior. He was also art editor of *Technique* 1911 and a member of the Institute Committee in his senior year.

Following graduation, he practiced architecture for a number of years in New York City, taking time out to serve as a lieutenant in the Camouflage Corps during World War I. After the war he formed a partnership of Foster and Vassar, with offices at 10 East 47th Street; and in 1932 he was named director of the Historic American Buildings Survey for New York State. In 1934 he went to Washington and soon was a partner in the firm of Howe, Foster and Snyder.

From 1942 to 1946 Bill again took "time off," this time to serve with the American Red Cross in India. He also was one of the consulting architects of the

Public Buildings Services of the General Services Administration. He was one of the original members of the Georgetown Committee of the Fine Arts Commission. He established an annual award for good architecture, which is administered by the Progressive Citizens Association of Georgetown. He was an active member of the American Institute of Architects and also belonged to the Cosmos Club (where he lived for many years), the Washington Building Congress, and the Century Association of New York City. He never married and is survived by a brother, Oliver J. Foster of Agawam, Mass., and four nephews. Private funeral services were held in Springfield, Mass.

Aleck Yereance, I, and Pete Gaillard, VI, kindly sent me clippings from the *Washington Evening Star* and later Aleck wrote that a memorial for Bill would be held at 3:00 P.M., Sunday, April 13, and he would plan to go and represent the Class. This was at the Octagon House, which he restored some time ago. Personally, it was a great shock to learn of Bill's death, for he had seemed just like his usual enthusiastic, buoyant self in late April, 1957, when he was instrumental with Aleck and Pete in arranging a dinner of 1911 men in my honor when I was in Washington attending the U. S. Chamber's annual meeting.

At this mid-April writing word has just been received of the death on February 27 of Dr. Ibrahim F. Morrison, I, until recently Professor and head of the Division of Applied Mechanics at the University of Alberta, Edmonton, Alberta, Canada. Born in Braintree, Mass., February 2, 1889, he prepared at Brookline High School and attended Dartmouth College for a year, prior to entering M.I.T. with us. He was a member of Sigma Nu fraternity and ran on our winning sophomore relay team at Field Day, 1908. He was also active in the Civil Engineering Society while at M.I.T.

After graduation he worked for engineering firms in Boston and was appointed to the faculty of the University of Alberta in the fall of 1912. During World War I he joined the U. S. Army, training at Plattsburg, N.Y., where he received a commission and served for two years overseas as an ordnance officer, returning to Edmonton at the cessation of hostilities.

In all he taught for 42 years at the University of Alberta; and in 1954, while Professor Morrison was still teaching, the University conferred a doctorate degree on him, thereby breaking a precedent of not conferring any such honor on an active staff member. I. F. designed the municipal stadium in Edmonton; the city's water treatment plant; and bridges and hydroelectric plants in various sections of the Province of Alberta. His students considered him "the outstanding person at the University," and they have established a Morrison Memorial Shelf in the University Library in his honor.

Professor Morrison is survived by his widow, the former Kathleen Lavelle, who resides at their long-time home at 11620 Edinboro Road, Edmonton, Alberta, Canada; a son, Harold; two grandchildren; and a brother, Walter. Our sympathy, as a Class, has been expressed to Mrs. Morrison and the family.

An address change came through in early April, showing that Howard Williams, XI, should be addressed at 688 MacCulloch Drive, Los Angeles 49, Calif., instead of in New York City. So I immediately sent an air mail letter to our class vice-president and was rewarded with an immediate and enlightening reply: "My change of residence," he wrote, "was brought about by two factors. About seven years ago I purchased a home in the Brentwood Hills section of Los Angeles. As I was working so much of my time on the West Coast, I thought it better to have a home here rather than living in hotels so much, which to me is very tiring.

"As you know, I have maintained my apartment and official residence at 350 Park Avenue, New York City. This raised a tax problem and on top of this the building in New York will soon be torn down to make way for a new office building. Consequently here I am, and actually I am working just as hard — and perhaps harder — than ever before.

"You may know that Lou Wasey — one of the founders of Erwin Wasey with Mr. Erwin, who died some years ago — and I were partners for many years in our Erwin Wasey Companies in this country, Canada, England, Europe, South America, and elsewhere. Several years ago Wasey told me he wished to retire, so I bought out his interests; and at the end of 1945, after coming out of the Army and World War II, my son, David B. (incidentally a Harvard grad), came into my business. David went through all departments, here and abroad; and after Wasey retired, I took over as chairman of the board and David was made president.

"Last October 1, we merged into Erwin Wasey an advertising agency named Ruthrauff and Ryan, which had been operating in this country since 1912. This combine was the largest merger in our industry up to this time. It posed many problems and much hard work on the part of all of us. The 'Williams father and son team' has control of the new company, with David as president and the 'Old Man' chairman of the finance committee of Erwin Wasey. Ruthrauff and Ryan, Inc., with main offices at 711 Third Avenue, New York 17, N.Y. Mail addressed there will always reach me, for I am flying back and forth between here, Chicago, and New York every few weeks and have been kept pretty much 'on the jump.'

"Even though I am getting older each day, still I feel very well and have been putting in full days of work for many years now. Unfortunately I have not developed any hobbies over the years; I guess work has been my hobby. I shall probably keep going until David tells me he thinks I should quit. I hope this will straighten you out on my 'retirement' and change of address. I hope you are well and happy these days and that all goes well with my old pals of the Class of 1911. One of these days I am going to surprise you by appearing at a reunion or some such occasion." See that you do, Howard — we're all anxious to see you; and thanks for a wonderful letter.

Prefaced by "Jim Duffy's remark on his Christmas card to you reminded me that I have paved too much of the hereafter myself," a fine letter from Syd Alling, VI,

281 Berkeley Street, Rochester, N.Y., reached me in late March, and I'll share it with you. After congratulating the writer on the excellence of the class notes each month, Syd said that 1957 was an interesting year for the Alling family. "I had to go to the hospital for a minor operation in February," he continues. "Marion was with me all that day. She went home in the evening, tripped on a rug in the living room, fell against the fireplace tools, and broke her hip. I got the surprise of my life when a doctor came in to see me the next morning and told me my wife was in a room right across the hall. Well, the kids rallied around and everything was all right.

"Our daughter lives in Hampton, Va. She married an aeronautical engineer who works for the National Advisory Committee for Aeronautics at Langley Field. They have three sons who will be 16, 14, and 13 this year. Janet flew up and took charge the next day.

"Our son, David, is an M.D. After graduating from the University of Rochester Medical School and interning, he spent five years at Biggs Memorial Hospital at Ithaca. He left that hospital about a year and a half ago to take some post-doctoral work at Cornell in biological statistics. He expects to receive a Ph.D. next fall. Dave is married and has one daughter, 8 years old. Of course Dave drove up and lent a hand.

"Marion has made a normal recovery, which means she was on crutches for about eight months, then graduated to a cane, and has now discarded that. Should be back to normal in a month or two.

"The city fathers scraped the bottom of the barrel and appointed me a member of the city planning commission last fall. This is an interesting job, as there is a lot of civic development work under way here. Along with a little photography, tinkering, and golf, the time is well filled. In winter, especially this last winter, a snow shovel is substituted for a golf club.

"Frank Taylor, VI, and his wife have been in poor health this winter. They took turns having the flu and then in having relapses. They are better now, and I'm hoping that a little spring sunshine will complete their cure. Marion and I have our sights set on 1961; and if we are still in circulation three years from now, we'll try to get there. In the meantime, Dennie, keep up your good work!" Glad you and the Taylors are on the mend, Syd, and thanks for a fine letter.

Some times "reverse English" has to be used, as in this case where an old M.I.T. friend of mine, Andy Fisher '05 of Roxbury, sent me word about Harold A. Smith, II, now retired and living with his wife at 769 Northeast Terrace, Miami 38, Fla. "Mildred and I did not get to New England last summer," Harold wrote, "as we went across on a freighter. We sailed from New Orleans the day that Hurricane Audrey struck, and it really was rough in the Gulf and until we rounded Key West. We landed at Bremerhaven, then went to Bremen for a week, then to Kolin, Mainz, Basel, and Geneva. We loved Geneva, but after a couple of weeks went on to Barcelona for 10 days and then to Seville for a couple of weeks. Continuing to Lisbon,

we liked that very much, and during the ten days there made trips to nearby resorts. We then flew to London on the Portuguese Airline — a beautiful flight over the Channel, and it was clear for a change. We stayed for about three weeks and in the meantime visited The Hague, Amsterdam, Delft and the countryside. We liked Holland very much — the people are friendly and also speak a little English. We sailed from Rotterdam, with the ship going first to Antwerp, so we had a few days there for sight seeing. We landed in Tampa and then flew to Miami on October 25. A very good trip, but of course we did not get to Italy and did not see too much of France.

"It looks as though we will have to stay put for a while now and may get north possibly in September. The weather here has been rather bad, but Bob and I did not miss many days at golf; Lucille and Bob and the children came down on December 20 and went home on January 28. We have had much more rain than normal, and several times on the golf course it seemed that ice water was falling!" Thanks for allowing '11 men to share this letter, Andy.

Our honorary classmate, Honorable Thomas C. Desmond '09, announced through the press on April 3 that "he will not run for re-election this year to the New York State Senate." Jim Campbell, I, thoughtfully sent me a clipping from the *New York Herald Tribune*, which arrived simultaneously with a copy of the press release that Tom sent me. You have brought much distinction to Harvard and M.I.T., from both of which you hold degrees, Tom, as well as to yourself and Alice in the 28 successive years you have represented the Orange-Rockland Senatorial District in which you were born. You will be sadly missed at Albany, but I know we all feel you will live up splendidly to your closing statement: "But I am happy in the expectation that now I shall have more time for useful work in connection with educational and philanthropic duties — and possibly other public service." We salute you, Tom!

Fred Daniels, VI, was re-elected vice-president and board chairman of Riley Stoker Corporation at its 46th annual meeting on March 21. Stockholders were told that the 1957 operation was profitable and that the corporation expects to operate its plants at capacity in 1958 on orders obtained last year.

We have kept one of our brightest bits for last. We have learned of the wedding on December 28 of Bill Orchard, XI, and Miss Anne Rensland of Belleville, N.J. The happy couple spent their wedding trip in the Virgin Islands, where they stayed until mid-January. Upon their return, Bill was "completely tied up" with American Water Works Association meetings, but he and his bride left on the last day of February for Hawaii, whence they returned on April 2. They are at home at 546 Ridgewood Road, Maplewood, N.J. Our heartiest congratulations to you both, Bill. May you have many, many years of happiness together.

We are still making a fine showing in the Alumni Fund, which closes on June 30. Then, of course, the 1958-59 drive

starts on July 1, and it's never too early to climb aboard the bandwagon. Don't forget Alumni Day at M.I.T. is on Monday, June 16, so make your plans to be present if you possibly can. You'll never regret making the trip. See you there, I trust! — ORVILLE B. DENISON, *Secretary*, Chamber of Commerce, Framingham, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford 55, Mass.

1912

I am very sorry to have missed the May issue, but I was suffering a severe attack of sinusitis and spent a week in the Massachusetts General Hospital and about two weeks at home recovering. My advice is to stay clear of this particular bug.

Wright Shuttleworth writes from 2379 Grenada Avenue, Vero Beach, Fla., that he recently lost his wife. Last year he was chairman of the M.I.T. Alumni Fund of Muncie, Ind., which was one of the few posting 100 participation.

An interesting article by Marquis Childs in the *New Haven Journal-Courier* lists Russian graduates of M.I.T. who are at the very top in their aeronautics program. Among top flight engineers is Wladimir Wanjukoff. He studied with us in Mining Engineering in 1912.

Ralph Ferry writes from Saint Michaels, Md., that although they planned to build last winter, the illness of their architects and other delays have necessitated a postponement. They found a very attractive house with about three and one-half acres of land which goes under the name of Broad View. They will be glad to see anybody traveling in their vicinity. The following letter from Bolmer Vaughan tells of the death of Lester White: "Lester Marius White passed on about 1:30 this morning in Miami, his son Douglas having phoned us about 8:00 A.M. and a wire from his wife Jennie arriving a couple of hours later; apparently interment will take place there. Fortunately his daughter Elaine had flown in from Rome, where she is living, a short while back but had returned about a week ago. This will indeed be a hard blow for Jennie as they were very close one to the other and did so enjoy the Miami home they had built some two years ago. It will also be a loss for us, as their occasional arrival in New York was always a signal for a delightful get-together. How nice it was that he could have attended the last reunion, as he always enjoyed them so much. Never pass anything up; it may be later than you think.

"As you noted in the November Technology Review, Lester had been in rather bad shape for some time and came up here last fall for a thorough checkup; some more or less minor surgery was performed in the hopes that this would put him in better shape to undergo a more serious operation. Gladys and I saw him and Jennie a number of times at the hospital, and I was fortunately able to see them off on the train early in November. He seemed in fairly good shape then. However, Jennie wrote us the latter part of January that Lester had to return to the local hospital as he was not doing so

well; apparently the nephritis was too much for him. And it has been such a strain for Jennie all this time!"

I was fortunate to have two weeks at Boca Grande, Fla., early in March and on the way back was able to phone Gene Marceau at Saint Petersburg. Gene is well and would be delighted to see anyone going his way.

In Cleveland last week I talked with Arch Eicher on the phone and he advised that he and his wife are both well. Their daughter Alice is married and is with her husband at Fort Knox.

Carl Rowley is active as ever, and the building recession does not bother him. He is finishing an addition to the Western Reserve Historical Society Building and is also completing a new plant at Anderson, S.C., for the True Temper Division of the American Fork and Hoe. — FREDERICK J. SHEPARD, JR., *Secretary*, 31 Chestnut Street, Boston 8, Mass. C. BOLMER VAUGHAN, *Assistant Secretary*, 455 West 34th Street, New York 1, N.Y.

1913

Some botanist or nature lover has penned: "The nettle, touch it lightly and it stings you for your pains; grasp it like a man of metal and it soft as silk remains." Which type are you? Will you show your mettle and grasp the opportunity to join your classmates in the festivities of your 45th reunion at the Oyster Harbors Club, June 13, 14 and 15?

Well, the mystery is solved. We have received two copies of the Saint Cloud News of Saint Cloud, Fla. Our Howdie Rand and his charming wife Esther are now domiciled at Saint Cloud. Howdie spends many pleasant hours navigating in his hand-powered wheel chair and is seen touring around town with his friend who is also disabled, Luther O. Philips, who has a motorized wheel chair; Howdie hooks rides by using his cane as a tow link. Howdie has improved mightily both in ability to walk and talk again. Here's hoping that both Harold and Esther will improve so as to be with us at our 50th reunion, as we understand they will not be able to be with us at Oyster Harbors in June. We shall be thinking of you.

A brief note has been received from George W. Duncan of 1916 Rodney Drive, Los Angeles, Calif.: "After a stay of several years, completed an assignment at University of Philippines as visiting professor of Stanford." It is with great sadness that we notify you that Benjamin B. Tremere, Jr., 505 North Main Street, Palmer, Mass., passed on over a year ago. We shall be very much pleased to elaborate if any of you classmates can give us more details. Now that Arthur W. Carpenter has retired from the Goodyear Tire and Rubber Co. organization, he's like many of our retired 1913 men who have become very interesting authors and have published treatises of their experiences or research. Your scribe has received a nine-page clipping of *Rubber World*, November, 1957, which was written by Arthur. It is beautifully done and we wish that there were sufficient time and available space to record his summarization and history of rubber testing over the years from 1839 to the present. By the

way, his article is entitled "The Tower of Babel." If you haven't read it, I know that Arthur would be very glad to furnish you with a copy. Congratulations, Arthur, on being awarded the Charles Goodyear Medal Award in 1957.

Although now rather ancient news, we received a clipping from the *Factory Mutual Engineering* that Arthur L. Brown retired after 35 years of service as chief engineer. Also, Fred W. Blackwood, a 1913 man, retired from the same company after 25 years' service. Congratulations to you both, A. L. and Fred. We are looking forward to greeting you at Oyster Harbors in June. You retired guys have no excuses.

Another clipping from *Science* mentions that Walter L. Whitehead retired last June but continued as director of the 1957 M.I.T. Summer School of Geology at Crystal Cliffs, Nova Scotia, and has been appointed lecturer in geology at M.I.T. and visiting professor at Saint Francis Xavier University, Antigonish, Nova Scotia. Louis C. Rosenberg had an exhibit of his collection of etchings at the Fairfield Public Library in Fairfield, Conn., in the early part of the year. As you all know, Louis graduated at M.I.T. in the Class of 1913 and received the Technology Traveling Fellowship in Architecture which took him to Europe and the American Academy in Rome. On his return to America he became a designer and draftsman with the firm of York and Sawyer. His work in etching attracted the attention of many of the outstanding etchers from all over the world. He has been awarded many awards and prizes both in this country and abroad. Friend Rosenberg holds membership and is a fellow in most of the prominent art associations and societies all over the world. We of 1913 are very proud of you, Louis.

The Midwinter Alumni Association Meeting was attended by our loyal members R. Charles Thompson, Walter Muther, Edward Cameron, and Frank Achard. Just another retirement — Paul V. Cogan, formerly of Hull, Mass., retired as resident sales representative at the Bethlehem Steel Company in Bethlehem, Pa. This retirement became effective the first of the year after 45 years of service in various mechanical engineering positions. Well, Paul, we welcome you to our leisure ranks. We hope we shall see you and your attractive wife at Oyster Harbors in June. A copy of the *Tampa Sunday Tribune* has been sent to our attention which describes the "Suncoast Towers," a co-operative six-story apartment in Saint Petersburg, which we reported in an earlier issue and which project is the brain child and latest accomplishment of our own Lester Gustin.

Again, we had the pleasure of receiving a very newsy letter from Allen Brewer. His humor is always good, but he is not so boastful about our cold New England winters; for in both of his southern home states, Florida and Texas, the weather which was really cold probably was harder to bear than what dear old Boston experienced. Warren and Mrs. Gotherman visited the Brewers in January and the weather was fairly good in the Sunshine State. Why apologize for your climate? We have no sympathy for you southerners, but our northern visitors to your

sunny clime were very glad to return to New England and they paid for their experience. Thanks for the "yenom" (money to most of us). We are looking forward to seeing you and your better half in June.

Well, since they keep retiring one by one, we wonder if any '13 men will be laboring in 1963. The latest retiree to be reported is Clarence J. Berry, from Consolidated Gas and Electric Light Company. He retired as manager of the utility's lighting service department, Baltimore, Md. Clarence, as a graduate from M.I.T. in Electrical Engineering, was first associated with General Electric Company in Cleveland, Ohio. During World War I he served in Europe with the U. S. Army; and during the following years until 1924 he was active in lighting and lamp manufacture in France. In 1944 and 1945 he won first prize in a nation-wide contest for the design of a fluorescent lighting fixture. Clarence has served as regional vice-president of the Illuminating Engineering Society. Good luck, Clarence. Shall be looking for you as Oyster Harbors this month.

John H. Hession is very active in the Massachusetts Engineers Week Committee which sponsored the National Engineers Week in the early part of the year. Hession is a prominent member of the Massachusetts Society of Professional Engineers and president of National Gunite Corporation. He is a member of the Holy Name Society and several other Catholic organizations, also several engineering societies including the New England Water Works Association. Good work, John. Why don't you become active in 1913?

It is with a heavy heart that we must report the passing of another well-remembered classmate, Benjamin S. Munch of West Hartford. He died in Fort Lauderdale, Fla., February 15. He was president of the Atwater Manufacturing Co., Plantsville, Conn., and former secretary of the General Electric Prentice Manufacturing Co., New Britain. All of our classmates will remember Ben as an outstanding track star, both class and varsity. We extend to Mrs. Munch and his daughters our most heartfelt sympathy. Again comes added praise for our champion story teller, Art Townsend. This citation or praise is not for story telling but rather a very pleasing write-up in the March issue of *Tech Talk*, which praises Art for the noteworthy administration as director of Lowell Institute School.

Announcement: Harry L. Bowman '13 was chairman of the Reactor Shielding and Containment Session of the 1958 Nuclear Congress, International Amphitheater, Chicago, Ill., March 17 through 21, 1958. Why don't you write us, Harry, about your accomplishments? Still another announcement: April 24, Thursday, 7:30 P.M., Engineering Writing and Speech, M.I.T., Room 4-270 — organization meeting. Speaker: Edward H. Cameron, former head, Publications Division of Jackson and Moreland. Hope we can make that meeting. If not, good luck, Ed. Phi Gamma Delta magazine reports: Kenneth Franzheim says hello from Houston, Texas, where he is president of his own architectural concern. Percy G. Whitman is president of Hunt Process Co., Inc., in

Los Angeles; and his son, John E. Whitman '49 is working there, too.

Well, my lads and lassies, I guess this is it. I expect to see many of you at your 45th reunion at Oyster Harbors June 13, 14, and 15 and on June 16 at M.I.T. Keep a secret, but I think my home-town folks don't want me in public office again. I wasn't beaten, but I came in second. — GEORGE P. CAPEN, *Secretary and Treasurer*, 60 Everett Street, Canton, Mass.

1914

The notes this month and next month are partly written by your Assistant Secretary because your Secretary has skipped the country. Rich has gone to the Far East, visiting Manila, Hong Kong, and Japan. During his stay in Japan he hopes to visit our classmate Tatsuo Furuichi and several former Technology men. He expects to be back about July 1.

While in New York City the last week in March to attend the Institute of Radio Engineers' exhibition, your Secretary ran into Gus True. Gus is now the president of the Essex Connector Corporation of Salem, Mass. He had a new Mico, high frequency connector that looks like a most useful device for guided missiles and a host of other uses.

With great regret we report the death on March 26 of our classmate Angus V. Swift. The majority of Doc's business life was spent with Stone and Webster Engineering Corporation where, at the time of his retirement in 1956, he was general purchasing agent, with 36 years of service. After retirement he made his home in Duxbury, Mass. He prepared for the Institute at Chauncy Hall School. He was a member of Sigma Chi and a member of the freshman and sophomore baseball teams. He was currently a member of the Massachusetts Society of Professional Engineers and the Duxbury Yacht Club; also an honorary member of the New England Purchasing Agents Association. He was married first in 1916 to Esther Crocker. They had one daughter who was killed in an automobile accident in 1947. In 1927 he married again, Edith M. Black. She survives him. They had one son who passed away during heart surgery in 1948 when he was a junior at Tech. The Class of 1914 extends its condolences to Mrs. Swift in the passing of a classmate who will not be forgotten.

No doubt many of you have already read the tribute to Donald Douglas in the recent *Reader's Digest* under the heading of "The Man Who Wrote DC in the Sky." It's worth reading if you haven't done so. Then make your reservations for a flight on one of the new jet DC-8's as soon as they are in regular service. — H. B. RICHMOND, *Secretary*, 100 Memorial Drive, Cambridge 42, Mass. H. A. AFFEL, *Assistant Secretary*, 120 Woodland Avenue, Summit, N.J.

1915

You are all — families and guests — cordially invited to our annual class cocktail party — Alumni Day, June 16, at four o'clock in the afternoon at the M.I.T. Faculty Club, 50 Memorial Drive, Cambridge. Whether you are going to Alumni

Day or not, you are strongly urged to come to the class party to meet old friends. Plenty of parking space and only a short walk from M.I.T. This has always been a pleasant and enjoyable class meeting; and Barbara Thomas and Al Sampson, again in charge this year, urge you to be there. During the cold, rainy visit we had in Florida in March, Fran and I had dinner and spent the evening with Tess and Gabe Hilton at Bellair Estates, Clearwater. They are doing well down there in their retirement. We saw Bod and Mrs. Mitchell in Clearwater and phoned John Homan at Madeira Beach. There's an increasing contingent of retired classmates in that area.

On October 13, at Holy Trinity Church, Washington, D.C., Frank Murphy's daughter, Ann Marie, was married to Miles Peter Eskin. On February 2, in Pasadena, Calif., Ben Lapp's son, Marshall Douglas, was married to Joan Marcia Greenberg. Congratulations to these two young couples and all the best to them from 1915.

From retirement on his farm in East Middlebury, Vt., Doug Baker regales us with some vivid winter experiences: "It will not be possible for me to get down to New York this time for the 1915 dinner. I wish I could. Next year it will be our dinner that has the highest priority for my midwinter trip. Best wishes to all there and particularly to Ben Neal in his great campaign for the 50th Anniversary Fund.

"Elizabeth and I are in good health and keeping busy. I figure that by next year I shall be breaking even in agricultural operations, though a profit is not likely since I cannot assign financial values to the many advantages of our retirement habitat. It was good of you to write to me. After enjoying for 10 days the sensation of having been referred to as 'actively working at farming' in consequence of a remark about agricultural operations in my previous letter, I have to confess their true nature. Last year my only farm revenue was half of some 600 bales of hay which I mowed and a neighbor baled, and the reason I did not break even was because the fertilizer I bought to produce more hay to buy more fertilizer amounted to 1.9 times the value of my share in the hay. Since hay at the barn is worth \$20 to \$25 a ton and a bale weighs about 45 pounds, you can see that my present production will not cause any worry to the U. S. Department of Agriculture. I should be able to work up to 1,500 bales in a couple of years.

"Getting the surface layer of stones off land that is mostly glacial moraine, converting trails into roads that a light tractor can negotiate, and work in the woods gives me something to do when I am not in the garden or mending or repairing something. But the only animals are a dog and two cats, and I can't qualify as a farmer.

"Right now the main job is pushing snow around. The lane from my door to the town road is about three-tenths of a mile. A granddaughter who lives with us has to be deposited at the entrance to our lane every morning to board the school bus. The town is quite willing to plow me out, but I can't ask them to attend to me before the main roads are done. So when

the snow falls or the wind blows at night, I plow. In a few days I shall send you a snapshot showing the large amount of snow that has to be pushed around by a small amount of tractor. Since the weapon of attack is the bulldozer blade of the tractor, with no side wings, my efforts result in a neat trench just wide enough for a car (and no turnouts!). Now the sides of the trench are three times the height of the bulldozer blade and I have had to appeal to the road commissioner to come through with his grader and let me get a fresh start. He said sure and he would have come through before but he saw I had done it. What he meant was that he thought maybe I would be insulted if he came through after I thought I had done the job. Statistically, we have had some 39 inches of snow since the first of January, and most of it is still on the ground; and it is as white and clean as the day it fell. I also hauled and cut up six cords of wood for the stove that supplements our central heating system. A real economy and, as the saying goes, the wood you cut yourself warms you twice. Best regards and real hopes of seeing you up here this summer.

"In my letter of February 11 I said I would send you a picture in a few days showing an amateur trying to plow some snow. Before I got the print of this picture there was another snow. I was not even here but in New Jersey on some family business. That snow I did not plow, nor did any one else for four days. The second print shows a bit of our farm road the morning after the plow came through. The third picture shows one of the first signs of spring in this locality. Best regards." Doug's pictures show snow that would scare you, with Doug driving his tractor through a big drift. The last picture he refers to shows the traditional pails catching sap on the maple trees. Maybe he and Speed Swift can do some business together up there.

One by one—here's a note from Phil Alger, who is anticipating retirement: "Here are two newspaper clippings that may be useful for your class news. The occasion was a total surprise to me, and was highly irregular in that it was not sponsored by any organization, nor was it attended by any active V.I.P.'s. I was reminded of the speech that I heard Nungesser make in Fort Wayne in 1921. He said: 'There are two kinds of birds. The eagle can fly but can't speak. The parrot can speak but can't fly. I am an eagle.' Then he sat down. Since I can neither speak nor fly, I have been a joiner who promoted others who can fly and/or speak. Apparently there are a few who appreciate this. Having only 175 more working days before retirement, we are considering what comes next. Probably Helen and I will trip abroad for a few months next year, and after that I may do some teaching. Any suggestions from those who have already had some experience of retirement will be welcomed." Phil sent a clipping from the April 1 *Schenectady Gazette* describing this unique honor for Phil's generous and active community service and showing a good-looking oil portrait of him. Congratulations, Phil! We are all sure you richly deserve this testimonial: "Philip L.

Alger of 1758 Wendell Avenue was honored during a dinner dance Saturday night at the Locomotive Club for his many civic activities. Some 100 friends and associates attended. Alger was lauded for his participation in such groups as the Charter League; Schenectady Bureau of Municipal Research, Inc.; the city and county affairs and education committees of the Chamber of Commerce; and, most recently, for his efforts to bring about the creation of the county government study committee of the board of supervisors, among others."

It's nice to know from this good note that Sol Schneider enjoyed the New York class dinner and that we'll have a chance to see him in Boston: "Just a few lines to acknowledge receipt of your note. I am sure that all the boys were sorry that you could not make the class dinner in New York. But, as George Rooney explained, it was certainly your duty to be at the last rites of your old friend. We are planning to be in Boston about the middle of August; however we may get up to Boston in June, as an extra trip. Anyway, I will get in touch with you when I get there. Remember me to Jac Sindler¹⁷ when you see him. Kindest regards to you and Fran from Ann."

From Winter Park, Fla., where Jack Dalton was resting after his March 1 retirement, he writes: "I have just received and read the Alumni Fund Report through January 31, 1958, and am thrilled to see that of all classes reported, 1915 is tied for 8th place with the combined classes of '79 through '96. We are tied with '05 and '24 in proportion of classes who have contributed, but we are 5th among all classes in average dollar contributions. Of the four classes ahead of us, one is the 50-year class, '08, and one the 60-year class, '98. Congratulations to you and all who are spearheading our class fund raising effort. This is just Alumni Fund and does not include direct contributions for specific things nor, of course, does it include any amounts contributed toward our 50th fund. I wish this could be relayed to all directly working on our class fund raising." It's good to hear from Jack to know how he feels. I join him in thanking all classmates who have worked so diligently and devotedly on fund raising projects, especially Max and Clive. Ben Neal is pushing hard on his 50th Capital Gift Fund and has, by now, appointed some regional chairmen. In Boston Wally Pike, George Rooney, and Bill Brackett are his committee and are doing an excellent job for Ben and for the Fund. How about everybody giving Ben a hand on this? Ben is doing a monumental job and deserves all the support, help, and contributions we can give him. Never let down on that fine old 1915 spirit. Weare and Kath Howlett boast a fourth grandchild, Deborah White, born March 8, 1958, to their daughter, Joan. Congratulations all around. On March 21 Alan Dana was the speaker at the business dinner of the Square Club of the George Washington Masonic Lodge in Ansonia, Conn. He showed his colored pictures of Mexico and life in the jungles of Panama.

Ralph Hart sent us a clipping from the *Princeton Alumni Weekly* by a Princeton

1941 graduate, headed: "Graduates Unite." The article strikes a **chord** in college men everywhere—leave the women and children home and do not bring them to class reunions. He says: "... their integration into the reunion program is a postwar phenomenon no less regrettable and insidious than the admen's campaign to sell us on 'togetherness' and 'active leisure.' ... Whatever the reason, it has turned what used to be an interlude of convivial beer drinking and amiable nostalgia into a nerve-wracking jamboree combining the worst of parents' day at the nursery school and a get-acquainted barbecue at the new country club. ... It's bad enough trying to remember the names of several dozen balding, heavy-set virtual strangers without having to recall all the Nancys, Bettys, and Carolines they've got in tow. As a matter of fact, I walked out of my 15th reunion two years ago after turning up on a Saturday morning with a hangover and having to make small talk with somebody's gabby wife while somebody else's maladjusted brat smeared mustard on my sleeve. Please don't get me wrong. I am not against families—in their place." Attwood believes that he is not the only one who holds these opinions—"My guess is that plenty of alumni feel the way I do."

Our stag reunions and class dinners have always been so outstandingly successful and enjoyable that I am sure 1915 heartily agrees with our Princetonian contemporary.

From the Phi Gamma Delta periodical of December, 1957, is some news about some of our classmates: "Eastman A. Weaver is having great success developing a mathematical system for profitable forecasting of markets in commodity futures, as begun years ago with Brother Chick Dana." Easty writes he'll be glad to furnish information to brothers interested in becoming independently wealthy. Archibald S. Morrison, who was chairman of the Library and Files Committee, writes that he will soon retire. He tells us, "No family—yet!" Marshall B. Dalton, past Archon and National Fraternity President, has recently been elected a fellow of the American Academy of Arts and Sciences. Brother Dalton is president of Manufacturers Mutual Life Insurance Company and Machinery Insurance Company and is a life member of the M.I.T. Corporation. Allen Abrams retired as vice-president of Marathon Corporation in January, 1946. He is now a consultant to Arthur D. Little, Inc.

Our nomads continue to nomad. From Bermuda, in March, Frank Scully wrote that he was there for a week to get away from the pressure of business. We hope Frank keeps healthy and happy.

When Bur and Jan Swain sailed in January for the tropics, the class sent them a little sailing gift of a bottle of Bur's favorite Bourbon, which will explain this cute note from them both somewhere in the Caribbean: "Such a very great surprise. Thank you a million and the rest of the gang. I carried the package from the front desk to the cabin. Jan and I guessed and speculated all the way, and arrived at no result, but Boston never entered into our speculations. Geel what a thrill we got when the card said '15

gang.' The sea or ocean did a good job of going around and around without being pushed from a good swig. In fact, Saturday morning I got banged up a little. Please thank everybody from both of us. So sorry to miss the New York party. Please give them my greetings. Have fun. Good luck and health to you and Fran and to all. Very many thanks for your entertainment at your home a couple of Fridays ago. The northern island of the Bahamas just up in a brilliant ocean. And I second the motion — thanks and kindest regards to you all. Jan." They also sent a colorful card from Guatemala. Nice to hear from them.

Ray Walcott has been doing a splendid job sponsoring the monthly 1915 lunch dates at the new M.I.T. Club in New York City. It was Ray who notified us of Chauncey Durkee's passing and wrote further: "I have written to Mrs. Norris Kimball in Akron. Norris roomed with Chauncey at M.I.T. Norris is an invalid — actually a case somewhat like Chauncey's — heart, with complications. I saw Norris last summer; our families were much together when we were in Akron." We are sorry to hear this sad news about Norris.

Again, our ranks are thinned and our spirits saddened by the loss of these classmates: Pete Munn, August 23, 1957, in Wellesley, Mass.; Benjamin L. Johnson, November 6, 1957, in Chicago; Calvin Tomkins, Jr., January 31, 1958, in New York City. To the families of these men we send our warm and sincere sympathies.

To all of you classmates and your families — a happy and enjoyable summer! Fran and I would be delighted to see any of you who come to Boston this summer. Just phone us, KIRkland 7-6438, and we'll roll out the red carpet for you.

So closes this year's column; all those who have contributed to make this interesting reading have done their bit to "help Azel." — AZEL W. MACK, *Secretary*, 100 Memorial Drive, Cambridge 42, Mass.

1916

Ralph Fletcher, our President and inveterate skier, back from Switzerland around the middle of April with his wife, starts the column off with a few words: "As you read this, if the date is not later than June 14, you are just in time to join up at our ladies-invited 42nd reunion, June 13, 14, and 15 at the Chatham Bars Inn, Chatham, Mass., out at the southeasternmost part of the Cape. Restful cottages, golf, tale-telling, tennis (for the likes of Jap Carr), as well as just plain lounging and sun-bathing. Don't miss it . . . you and yours will never forgive yourselves. If the date is June 16, come to Alumni Day exercises in Cambridge, and if the date is June 17 or later, we hope you were at the reunion and know you wouldn't have missed it for anything."

At the April monthly 1916 luncheon at the Biltmore in New York, we heard that they say that the Class of 1916 is a headliner for attendance. Looking for causes we have come up with this partial list: (1) Joe Barker's and his secretary's activity in sending out notices, (2) Jim Evans' use of the telephone, and (3) the kind of people you meet when you go! Jim Evans

continues as an ideal member of the executive committee, from a secretary's point of view. Frequent chunks and even scraps of information come to our desk via Jim regarding the doings of those who may happen to be doing things. For example: post cards (1) from Joe and Mary Barker in Spain who were fearing they were going to miss Ralph and Sybil Fletcher in Switzerland, and Mary's comment that she has met the *most* wonderful M.I.T. people; and (2) from Steve Brophy in India following his travels through Japan, Malaya, and Ceylon. These trips preface stories and accounts and maybe slides at our 42nd Reunion June 13, 14, and 15 at Chatham Bars Inn on the Cape.

Since preparing our April issue report on Earl Mellen we've had further information on some of the many things he is and has been doing. In addition to being chairman of the Daystrom-Weston Division of Daystrom, Inc., he is on the board of managers of the Howard Savings Institution of Newark, N.J., and is also a director of the Fireman's Insurance Company of Newark, N.J., one of the America Fore Group of the Continental Insurance Company.

We regret to report the death of John K. Heller in Palo Alto, Calif., following a long-standing heart ailment. We heard from his widow that he had been active until the last 18 months in developing a gas-making apparatus mixing butane or propane with air for peak load or in towns where natural gas was not available. We were glad to hear that John was always interested in the reports of his 1916 classmates; he himself was quite active in the M.I.T. Club during the time they lived in San Francisco. We also regret to report the death of H. Cleveland Burnham in Melrose in March. He was a veteran of World War I, serving as a Navy Air Corps pilot, and had for many years been an engineer with the Hartford Accident and Indemnity Company. He is survived by his wife, Mrs. Margaret E. (Parsons) Burnham; three daughters; and four sisters. A message of sympathy has been sent to both widows by our President. We have also had word of the death of Walter G. Goodwin in Concord, N.H., in March. He had been a civil engineer for the New Hampshire State Department of Public Works and Highways for 26 years. Members of his family include a brother, Horace F. Goodwin, and two nephews, all of Waltham.

Last month we gave *some* information about Bob Wilson and his retirement as chairman of Standard Oil (Ind.), but we couldn't begin to cover all the things that *can* be said about him. We have received clippings from the Alumni Association collections, personal information from other sources, and perhaps most illuminating, a copy of the March, 1958, issue of *Torch*, the S.O. (Ind.) magazine for employees. The cover of this issue is a full-page, pen-and-ink sketch of our famous Bob; and the principal article, noted on the cover, is "Dr. Robert E. Wilson Retires." We'll bring the magazine to the reunion, but here's an account of some of the interesting pictures in this issue of *Torch*. The first photo shows Baby Bob (hard to imagine) above the caption "First speech: orator's pose was natural

for Bob, age 2." The next picture shows Bob and his mother, with the caption: "With Mother, he visited old home in 1951 and accepted award as 'Pennsylvania Ambassador.'" Then the next picture is the one we had at our last reunion, showing Mr. and Mrs. Bob with all their daughters, sons-in-law, and grandchildren, totaling 16 individuals filling S.O.'s board room in Chicago on the occasion of their 40th wedding anniversary. Going back in time, there's a picture of Bob, his uncle, and his sister Gertrude, with the caption: "Seven-year-old Bob helps his uncle swing sister Gertrude. Bob was oldest of two boys and two girls." And did you know (we didn't, but we're not surprised) that Bob graduated as valedictorian, Magna Cum Laude, from Wooster, when he received his Bachelor of Philosophy in 1914?

Now to go on with the pictures. The next one shows four hopefuls standing on the grass — it looks like Rogers or Walker — with the caption: "Wilson, left, and classmates display diplomas on M.I.T. campus in 1916. He paid his way by tutoring and summer jobs; had a 65¢ daily food budget." (That reminds us of some of the lunches some of us used to have on Saint Botolph Street with a ticket to be punched — seven lunches for \$1.25!) Of Bob's three companions we recognized Bill Leach but not the other two, so we asked Bob for identification. He writes that they were Earle Pitman and Laurin Zilliagus, and adds: "Bill Leach was with Mathieson Alkali and International Minerals until his early retirement. Earle Pitman was with Du Pont and had much to do with the development of Duco, but retired early. Laurin Zilliagus became a professor in his native land of Finland." The next picture shows Bob with a high collar, the kind we all had to wear in those days, sitting on the edge of a bench in an obviously chemical laboratory. The caption: "Wilson launched career in applied chemistry as a research associate in M.I.T. His wife photographed him in laboratory in 1917." Next there's a picture of the staff of S.O.'s Whiting Laboratory which he joined as assistant research director in 1922. And there's a picture for the attention of Henry Shepard: Bob in a high, high one-seater Locomobile of the turn-of-the-century vintage, designated: "During his first year as chairman (S.O., Ind.) Dr. Wilson drove Locomobile as the guide car in the Golden Jubilee of the automobile in 1945." And for fear of embarrassing Bob, we'll mention only one more thing, a picture showing him at a table on a stage, with television lights and a card reading "Kiplinger" and caption: "Dr. Wilson goes on television in one of over 500 public addresses he made as chairman." And now we wish Bob and his good wife a pleasant trip, come August, when he expects to be a delegate to the Geneva "Atoms for Peace" Conference. They expect to cover quite a bit of Europe traveling before and after the meeting.

Ralph Davies' picture appeared in the February issue of *The Review* in connection with the Pittsburgh Regional Conference held in the Penn-Sheraton Hotel on December 7, 1957. Ralph, as a member of the regional conference steering com-

mittee, is shown in the good company of Thomas I. Stephenson, 3d, '45, President of the M.I.T. Club of Western Pennsylvania, and Raymond Mancha'26, toastmaster of the evening banquet. This conference on science and technology had several notable speakers, including Dr. J. A. Stratton, Acting President of the Institute, who spoke in place of President Killian, whose assignment as Special Assistant to President Eisenhower for Science and Technology prevented his attendance at the conference. We asked Ralph for a few personal notes on the conference and here are some of the things he wrote: "As you well know, a program has to be really good to hold the attention of a large group from 10:00 A.M. on a Saturday through dinner and after-dinner speeches. The outstanding feature of this conference, to my mind, was that the speakers were so good and their material so interesting that they really held their audience. In round numbers about 400 were present, of whom approximately 60 per cent were M.I.T. graduates. The nature of the speeches was such that they were fully as interesting to the non-graduates as to the graduates. Of particular interest to the Alcoas present [Ralph is V.P. of Alcoa], was the citation presented to I. W. Wilson '11, Chairman of the Board of Alcoa, by Gilbert Roddy, President of the Alumni Association. Incidentally, Alcoa was well represented by 22 men, of whom 12 were M.I.T. graduates. Practically all had their wives present for the dinner session, and even the wives were interested. Another interesting aspect, to me at least, was that the real work for this conference was done by the younger Alumni; and the success of the conference was almost entirely due to their efforts. For example, Tom Stephenson '45 of Alcoa was the real spark plug of this undertaking. In my own case, Jerome Hahn '47 exercised his resourcefulness and did a wonderful job with the art work and with the organization and direction of mailings of all types. I talked to a number of people during and after the conference, and they were unanimous in agreeing that this was a worth-while job well done and that the timing was particularly significant in view of the present-day country-wide interest in the whole subject of education."

Harry Lavine, who is unit manager of the Equitable Life Assurance Society in Boston, responded nicely to our request for news. Says he has not felt his story was too important, but we of course quite disagree. He says in part: "Shortly after my precious son graduated from Wharton School of Commerce and Finance, he became a member of our Armed Forces, and in the willing discharge of his duties, lost his life. That tragedy has left forever its mark upon my wife and myself." His daughter graduated from the University of Wisconsin and Pratt Institute, and after a short professional career in costume and clothing design, married Richard A. Davis, a graduate of the Harvard Business School. They live in Westbury, Long Island and have showered blessings on Harry and his wife threefold — two granddaughters and one grandson. Harry goes on: "Effective August 1 this year I will 'surrender my sword' as manager. It

is the requirement of the Society to retain in management no one beyond the age of 65. During my 28 years of service — and they have been happy years of service and should continue so — the group under my supervision, consisting of 28 representatives, has earned the distinction of being, year in and year out, the leaders in New England and ranked within the first 10 per cent of the over 500 similar organizations in the U. S. I regret that I must forego this leadership (which doesn't mean that I regret having been born 65 years ago), but I shall be nurtured in the years 'out of harness' by the fact that these men, who were willing to share their futures with me, will be making the lives of many, including their own and their families, more secure by identifying themselves with me. This change in my status affords my wife and myself countless opportunities for pursuing those things which heretofore have been tabu and which beckon us on. I am egotistical enough to believe that I might find a place, together with my sales efforts, in some laboratory where my strong love for organic chemistry may be followed." We predict you'll find exactly what you want, Harry.

Ed Barry keeps us up to date on what he has been and is doing: "I am still with Stone and Webster designing power plants. Aside from greatly increased steam pressures and temperatures and larger unit capacities, they are not much different from those we used to design in Course II. American Society of Mechanical Engineers affairs have kept me fairly busy, especially those of the Boston Section of which I have for several years been a member of the executive committee and one year, chairman. Currently I am general chairman of the committee on arrangements for the 1958 National Power Conference, to be held in Boston next fall. The Society recently honored me by advancing me to the grade of fellow. I am not in politics, but for the past five years I have served as the mechanical engineer member of the Massachusetts Board of Registration of Professional Engineers and Land Surveyors, having been appointed to the office by Governor Herter. Although my term has expired, I am continuing to serve as a lame duck member until the present governor names my successor. My musical classmates may be interested in knowing that I keep up my interest in music and play first flute in the Harvard Musical Association Orchestra. My wife and I are reminded of the advancing years by having two married sons and five grandchildren, but we are still hale and hearty."

Sometimes when we are really hard-pressed for news, we go back to some of the boys with whom we went through high school. April was one of those times, and we're glad to report that Larry Knowlton and Howard Hands both came across at a moment when our mail pouch was nearly empty. Larry, who has been doing all the things that the executive vice-president of the Providence Gas Co. has to do, claimed that he had little to report. He is due to retire at the end of October and is disengaging himself from responsibility as fast as he can. He has eight grandchildren, but they live so far

away he sees them only once or twice a year. (Our not-so-complete records show only 12 in the Class that have 8 or more grandchildren — more statistics gratefully received.) Three years ago Larry moved out in the country where there is grass to cut (riding a sulky behind a power mower) and flower gardens to weed ("sitting down," he says). They live in the town of Cumberland, R.I., but their post office was Manville until recently, "which was so confusing that even the Post Office Department decided to do something about it."

And now for what we heard from Howard Hands. His son Richard was recently transferred to New York City and has settled his small family in the Preakness section of Wayne, N.J., not so far from our old homestead (of 32 years) in Mountain Lakes. So this means we may expect to see Howard any one of these days when he's down this way for a visit. It seems that he and his wife did come this-a-way on February 15 on their way to Florida, but they hit one of our old-fashioned storms and became snowbound for a day and a half. Then coming back they got caught in our 1957-58 humdinger — March 20 and 21 — when we all had 18 or 20 inches of the heavy kind and New Jersey suffered heavily from having power lines down. Says Howard: "It was a wasted five weeks in Florida this year. A rough trip down, four weeks of mediocre weather, a rough trip back. And to cap the climax, I came home to a burglarized and ransacked home. I won't forget this year in a hurry. Yes, I'm serious on Florida. I rather like the Clearwater area where I've found the house I like, the lot I like, but not the price I like."

Finally, have you made a contribution to the column over the past eight months? If not, now is the time for you to help keep the per cent response figure high. We've had a number of notes expressing appreciation to those who have turned in some lengthy accounts for the record — those who have made it possible for 1916 to continue very vocal every issue. Again, write a little but write often to: HAROLD F. DODGE, Secretary, 96 Briarcliff Road, Mountain Lakes, N.J.

1917

Alumni Day 1958 may be a matter of history when you read these notes, and plans for your summer holidays will be about ready to materialize. Write us about any interesting experiences that you have.

Dick Lyons brings us up to date on classmates in his Texas vicinity as follows: Wendell B. Ford, whose home is in Lewisburg, Tenn., writes: "Your letter addressed to Lewisburg was forwarded to me in Teheran, Iran. I am with George Fry and Associates doing Management Consulting for Iranian Industry as an I.C.A. project. It is very interesting work and a considerable challenge." Ras Senter sends the following: "As President of E. G. Senter and Company — a real estate holding and development company — and Dallas Petroleum Company, both of Dallas, Texas, I am kept busy with activities confined mostly to Texas and Louisiana, and with very little traveling to far places, which explains my absence from

the last two 1917 class reunions, much to my regret." (If the Secretary remembers correctly, on the occasion of Ras's last attendance at a reunion, he arrived in true Texas style—wide brim hat, cowboy boots, and so forth—all purchased at Macy's in New York.) Ras continues: "For diversion, I indulge in week-end golf, and particularly enjoy visits from classmates and friends passing through Texas. All visitors are most welcome." Al Moody says: "I am still in Malvern, Ark., on operations for the Texas Illinois Natural Gas Pipeline Company, and I expect to stay here until I retire in October, 1959. When that happens, we are planning on going back to Denver to live, as most of our children and grandchildren are in the Rocky Mountain area. I hope to be able to put in a part of my time on some phase of pipe line work. On my vacation this year, we are going to Denver and scout for a place to live." Rudy Beaver reports from the Colonial Motor Court, Concord, N.C., that he and his wife have been galivanting through the United States on a 10,000 mile journey, hoping to skip New England snow. With snow in April, it is doubtful if Rudy's hope was realized.

Vic Dolmage, consulting geologist of Vancouver, British Columbia, made the columns of the *New York Times* a few days ago under the heading: "Ripple Rock, Dreaded Hazard to Mariners, Destroyed." The article, with a three column picture of the blast, dated April 5, Campbell River, B.C., reads as follows: "Ripple Rock, an underwater hazard that has endangered mariners for more than a century, was destroyed today by a blast of 1,375 tons of explosive. Engineers here said they believed it was the biggest non-atomic explosion ever deliberately set off. The blast was set off on schedule, at 9:31 A.M. this morning, by Dr. Victor Dolmage, Canadian mining engineer, who planned the project for the federal Department of Public Works. Dr. Dolmage pressed the firing plunger in a bunker on Quadra Island, 2,400 feet from Ripple Rock. He shared the bunker with explosive experts, scientists, and other observers."

John L. Parsons found an old copy of *The Technology Review*—probably an issue in the year 1920, since the notes of the Class of 1919 are the last ones given—in which the Class of 1917 is featured by two full-page pictures. The large picture is captioned "Chowder at the 1917 Country Club." The smaller picture is captioned "1917, After the Chowder—N. B.—Dud Bell Brought a Suitcase." The report of the lively chowder party, attended by more than 50 classmates and probably remembered by many, was written by the Secretary of the Class, Walter L. Medding, Camp Gordon, Atlanta, Ga., or by Assistant Secretary Arthur E. Keating, Bridgeport, Conn.

Two bits of philosophy in closing: (1) "Marriage entitles women to the protection of strong men who steady the step-ladder for them while they paint the kitchen ceiling." (2) "Middle or old age is when a night out is followed by a day in."—W. I. McNEILL, *Secretary*, 14 Hillcrest Avenue, Summit, N.J. STANLEY C. DUNNING, *Assistant Secretary*, 21 Washington Avenue, Cambridge 40, Mass.

1918

The Review says these notes are due on April Income Tax day. Because our civilization has swelled up in agony from the financial poisons of war and inflation, many of us pay as annual tax a number of dollars equal to that we once had to support a wife and family. Inflation and war gave France a Napoleon, since when she has never had a stable government. Inflation and war gave Germany a Hitler of more recent memory. The lucid radiance of any logical mind will tell Uncle Sam to watch his step. Thinking about this rather gloomily last week while shoveling three feet of snow from my roof, I slid off. No damage. How could even an old man get hurt falling into a snow bank six feet deep? Incidentally, I also learned by experience that shoveling off a roof is one of those jobs which should be done from the top down. Working up from the bottom is disastrous.

Earlier in April, while registering in a motel where I stay one night each week in connection with a long, long day serving a client, I bought a *Saturday Evening Post* to beguile a few moments before retiring. This chance purchase brought with it an article called "Big Man in Small Houses," who turned out to be our own Bill Wills, less intimately known as Royal Barry. In addition to much other material, there were two stories worth repeating here. His first real prominence came in 1932 as a result of winning the Better Homes in America competition. His office labored mightily over an elaborate entry in the Norman style. At the time he was planning a small Cape Cod cottage for a young builder about to be married. At the last minute he also entered this house in the competition. It won. Since then, despite the fad of ranch house, split-level house, and the *avant-garde* monstrosities, Bill has stuck mostly to what the bright lads for several centuries have said is good architecture. It has brought him fame and a sizable fortune. Remember the *Life* magazine contest in which Bill was pitted against Frank Lloyd Wright? He won that, too. The other story is one of those little pin points of experience which illumine a man's character. I quote from the *Post* what Stubbins, now famous in his own right as a "modern" architect, had to say of his early experience as a designer in Bill's employ: "He's a past master in understanding and getting along with his fellow man. I'll never forget, when I was working with Royal, he not only saw to it that I had a generous sampling of Mrs. Wills's meals but also would lend me his car from time to time. I was young, and single, and I imagine I overdid the borrowing. One day when we were headed out to his home, he announced he had decided to buy a second car. We went to a used-car dealer and I helped him pick out an old Peerless—price \$50. Not long after, he casually remarked that he'd changed his mind about owning two automobiles, and offered it to me for 10 bucks. His tact and generosity solved a problem for us both."

Paul Blanchfield, who graduated from Course X, was buried early in March following his drowning in the Chicopee River canal, at Chicopee, Mass. His hat

and coat were found on the bank about 200 yards upstream from where the body was recovered. He had been employed in the chemistry departments of A. G. Spaulding and Brothers and the Fisk Tire plant, but more recently had worked for the maintenance department of the Boston and Maine Railroad. Later in March, Thomas M. Gibbons, who graduated from Course I, died in the Milton, Mass., hospital. A lifelong resident of the town where he operated a landscape contracting business, Gibbons was an active participant in local affairs. He was a veteran of World War I and a member of the American Legion. He served as a Town Meeting member for 25 years and was a former member of the local board of public welfare. He was a corporate member of the Milton Hospital and a trustee of the Milton Savings Bank, a member of the Town Club of Milton and of St. Mary of the Hills Church.

Pete Sanger sent me a dummy of the proposed reunion circular, which you have by now already received. He also, with subtle and unobtrusive felicity, requested I emphasize the fact that the Treadway Inn where we are to convene has now been transformed, by the simple expedient of changing its signs, into Clauson's Inn. The telephone number is in the North Falmouth district, but lists as LO 3-5926. Get your reservation in day before yesterday, sure. You'll never have another chance at a 40th reunion, and you'll rate among the greybeards come our 50th. — F. ALEXANDER MAGOUN, *Secretary*, Jaffrey Center, N.H.

1919

Harry Cikins writes: "Haven't seen much of any classmates of late. Big reason I suppose is that for over 20 years I have been in the life insurance field as certified insurance consultant. Have three sons, two of them Harvard graduates with master's degrees. One is with Social Security Board, the other in Washington as legislative assistant to Congressman Brooks Hays. One theological. Best wishes to all!"

Card from Lansing Quick says: "Most of the news from this part of the country has been 'colorful' lately, but as a damn-Yankee I've had to keep my mouth shut. Personally I haven't much to report. As of last payday I was still purchasing engineer for Shook and Fletcher Supply and Insulation Companies." He reports further that wife, daughter, and son are doing fine. And that he has one grandchild now and another in "lay-away."

Webb Patterson writes that he is continuing his literary endeavors and won an award last year. Nice long letter from Wirt Kimball in which he says that like everyone else he is finding business on the slow side at present (April) but looks for things to pick up by the end of the year. Wirt passed along word that Art Page has retired from his position as manager of the Daggett Chocolate Company in Cambridge, where he had worked for 40 years, and was credited with playing a major part in making it one of the world's leading manufacturers of confectionery products. Happy retirement, Art.

Wirt also passed on word of the death of Fred A. Parker in California in De-

ember of 1957. I know that you will all be sorry to learn of Fred's passing; he was a fine man, well liked by all.

A news release from Raymond Concrete Pile advises that Leon H. A. Weaver retired as of March 31 from a position he had held for the last 11 years as editor of the company magazine and co-ordinator of their public relations, advertising, and sales promotion. Good luck, Leon!

We are sorry to have to report that there have been three other deaths among our classmates in recent months: J. Harold Kaiser on January 28; Ken Davidson on March 19; and Maurice Michaels on January 18.

We hope that you will all keep in mind the Class of 1919 Luncheons which are held once a month at the M.I.T. Club of New York on the Friday of the first full week of each month. Time: 12:15 p.m., and you are all welcome. (Club is on the first floor at The Biltmore) At our luncheon on Friday, April 11, Phil Rhodes, Buzz de Lima, John Meader, Adolph Muller, Bill Bassett, Don Way, Jim Strobbridge, and Yours Truly were present. Hope you can join us soon! — E. R. SMOLEY, *Secretary*, The Lummus Company, 385 Madison Avenue, New York 17, N. Y.

1920

Mention was made in recent notes about Harold Smiddy receiving the 1957 Gantt Medal awarded jointly by the American Management Association and the American Society of Mechanical Engineers for "distinguished achievement in management as a service to the community." In January, Harold also received the Wallace Clark Award from the Council for International Progress in Management. An earlier citation received by our distinguished classmate was the Taylor Key awarded by the Society for the Advancement of Management. Harold Smiddy's honors are international in scope. He was recently made an honorary counselor of Comité Internationale d'Organisation Scientifique and was awarded the gold medal of the International University for Social Studies in Rome and the silver medal of the Italian Union of Christian Owners and Managers.

Ed Zahn has moved from Great Neck, N. Y., to Flushing, address 4230 Union Street. Phil Byrne may be reached at Esso Research and Engineering Company, P. O. Box 111, Linden, N. J.

Chuck Reed sends a card from Tobago, British West Indies, praising the climate and swimming there. He says he intends to stop at the Virgin Islands, Puerto Rico, and Miami before returning to Cleveland. Before visiting Tobago he had spent some time in the other islands, including Grenada, Barbados, Saint Lucia, and Martinique. If he will lend me some of his 3-D color slides, I shall be happy to show them to any visiting firemen along with the ones I took at Montego Bay, Jamaica, in February.

Perk Bugbee's daughter, Marjorie, now Mrs. Selwyn Atherton of Auburn, Maine, was the heavy winner on a recent television panel of "The Price Is Right." She got away from her two small children long enough to collect a French sports car and

a fine combination television and high fidelity phonograph. It pays to be the daughter of an M.I.T. graduate. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

1921

Last reminder to accept the annual invitation to attend Alumni Day on campus in Cambridge, Monday, June 16. Bring your wife and children and enjoy the entire day's program. In the morning, astronautics and the Russian challenge — by one who was there when Sputnik I startled the world. At noon, lunch with your classmates to pay honor to the Acting President of M.I.T., Chancellor J. A. Stratton '23, and to our beloved President, Jim Killian '26, in his new role as President Eisenhower's Special Assistant for Science and Technology. In the afternoon, see the amazing advances of the modern Institute, including the newly completed nuclear reactor, space travel and space navigation and the huge computer which has been establishing satellite orbits. Join all the classes in cocktails on the green of Briggs Field and then have dinner at the 1921 table in Rockwell Cage, with wives and guests. No speeches: instead, a special M.I.T. program will again be presented by Arthur Fiedler and the Boston Pops Orchestra in the acoustically perfect Kresge Auditorium. To paraphrase the current "anti-recessional," you auto come back to Tech — now! Phone, wire, or write to the Alumni Association in Cambridge for tickets; or just come along anyway.

It will be months before we stop writing about our 1958 Class Reunion in Havana. As Bob Miller says: "On my return from our dream week end, I can't seem to put my mind on ordinary things." Bob adds that he took pictures of every couple in attendance. On his return journey, he and Helen had visits with Herb DeStaebler and the Bill Walds in Miami. The *Reading, Mass., Chronicle* tells of the delightful vacation which Chick and Maida Dubé had in Havana, plus stops in Nassau, Key West, and Miami.

We have a very gracious reply from Helier and Graciela Rodríguez to our message of thanks from the Class of 1921, in which he says how pleased they were to be able to contribute to the enjoyment of the group. He continues: "I received from Juan Chibás '31 the beautiful silver bowl that you presented to Graciela and me at the dinner at the Habana Yacht Club. It is now nicely engraved. It was such a sudden and unexpected surprise that I think I did not properly express how deeply and sincerely we appreciated the gift. I should like you to help me make it known to everyone that we cherish this present as a very valuable token of the friendship and good will of my classmates. Many thanks." Our own sincere thanks go to Ted Steffian, Chick Dubé, and Roy Hersum of the Havana Reunion Committee for having obtained such a lovely remembrance in response to the unanimous clamor on the part of everyone that Helier and Graciela be recognized for all they have done for Technology, for the M.I.T. Club of Cuba, and for the Class of 1921. And to Johnny Chibás, thanks for seeing that a proper inscription was added.

Ted Steffian comes in for more thanks for his cablegram to the dinner at the Havana Yacht Club, which we omitted last month, and which read: "To all you lucky people, greetings; I am green with envy." Ted is to be further thanked for making the lovely illuminated, framed scroll of appreciation to the M.I.T. Club of Cuba from the Class of 1921. The frame was designed to include a transparent back cover, through which can be seen the signatures of all the members of the Class and their wives who were in attendance at the reunion. A card with Easter greetings from Herb DeStaebler in Hamilton, Bermuda, says: "Doing a little checking on alternate reunion spots." Needless to say, nowhere else can one find the combination of Cuba's warmth and beauty coupled with the friendly hospitality of the members of the M.I.T. Club of Cuba and their wives. By the way, have you joined the Club?

A note has arrived from Ted Steffian in which he says: "I was pleased to be invited to attend the Pre-Season Rowing Banquet last Friday, April 11, but was disappointed to see no others from the Class of '21 on deck. You may recall that it was during our interlude at M.I.T. that the first intercollegiate crew was put on the Charles River. This was 39 years ago, and many changes have taken place. During the last few years new shells have been christened in honor of Mrs. Killian and Admiral Cochrane — and on April 19, one for Acting President Julius A. Stratton. I hope next spring you '21 men, who spent so much effort in getting this sport under way, will find time to come and see what great enthusiasm there is for rowing at M.I.T."

Elliott B. Roberts, Captain, U. S. Coast and Geodetic Survey and Chief of its Division of Geophysics, and a well-known writer and public speaker, has also fashioned fame for himself in the field of photography. The *Technology Review* has frequently featured his scenic and artistic views, the latest appearing in the March, 1958, issue. This one, a parabolic radar antenna installed in Alaska, is cited by Elliott as an example of the modern need for materials of high purity and exacting properties. That sterling publication of the International Business Machines Corporation, *Think*, carried in its March, 1958, issue an absorbing account by Elliott of the history and accomplishments of the 150-year-old Coast and Geodetic Survey, started by President Jefferson for the purpose of making a survey of the coast line. Says *Think*: "Elliott B. Roberts might be called Mr. Coast and Geodetic Survey himself. He has spent 36 years in its service. He is also a member of the U. S. National Committee for the International Geophysical Year and project director of the U. S. geomagnetism projects. He has invented oceanographic instruments, written many technical and scientific articles, and authored a history of the C.G.S." *Think* could have added that he was graduated with the Class of 1921 in Civil Engineering; that he has had years of field service afloat and ashore; that he devised and headed the extensive earthquake and tidal wave warning service; that he has inventions in several other areas, such as radio.

We certainly appreciate the favorable press notice for this column, appearing in the 1923 Class Notes in the Winter, 1958, issue of the *Simmons Review*, under the authorship of Class Secretary Mrs. Sumner Hayward. It was spotted by our daughter, Eleanor, and her dorm mate, Pat Keegan, the daughter of one of Betty Hayward's classmates. Arthur R. Gatewood, Chief Engineer Surveyor of the American Bureau of Shipping, New York, is the author of a paper presented to the winter meeting of the American Institute of Electrical Engineers. Liz spoke on the subject of "Recommendations for Electrical Installations in Ships."

David O. Woodbury, foremost of our many top writers in the Class, has taken "riting" out of the three R's in the February, 1958, issue of *Reader's Digest* and left an absorbingly funny article entitled, "Readin', Rockets, and 'Rithmetic." This is a modern rocket age sequel to the equally funny article Dave did about the same son, Christopher, when he built a small but efficient Van de Graaf generator a few years ago. If you didn't see either article, beg, borrow, or buy the back issues. Dave does his usual fine job. A long illustrated article appeared in the *Portland, Maine, Sunday Telegram*, datelined Ogunquit, and complimenting native son Dave on his ability to make science understandable to the average layman. It speaks highly of Dave's 13th book, *Around the World in 90 Minutes*, published this year by Harcourt, Brace and Company, for its answers to the space age, satellites, and the importance of the Russian Sputniks relative to the American people. Dave's recent summer television work on the M.I.T. Science Series in Boston afforded an opportunity for all of us to see him last Alumni Day, and we hope a similar treat is in store for us this year.

Wang Chung-chi, according to a Tapei, Formosa, dispatch to the *Washington, D. C., Star*, a member of the M.I.T. Class of 1921, one of Nationalist China's best known engineers and a former joint chief manager of the Kailan coal mines in North China, died on February 14, 1958. We do not have any record of him in our files nor does The Review office. Can you help? Ormond W. Clark reports his address as Box 466, Whitehouse Station, N. J. Dr. Ronald M. Ferry has moved from Cambridge to Barnes Hill Road, Concord, Mass. Hugh F. Peirson, formerly of Lakewood, Ohio, is with the W. S. Tyler Company, 2404 West 7th Street, Los Angeles 5, Calif. E. Stanley Lockwood of 530 78th Street, North Bergen, N. J., has retired as superintendent of the Hudson County electric distribution department of Public Service Electric and Gas Company after 38 years of service.

Colonel William C. Ready writes that he retired from the Army in 1957 and his permanent address is 1904 Flora Road, Clearwater, Fla. Reverend Everett R. Harman continues as pastor of the Church of Christ the King, Cedar City, Utah. Colonel Robert A. Hill, formerly stationed at Fort Bragg, N. C., can now be reached at P. O. Box 691, Anthony, N. M. Maurice B. Lieberman has a new home at 1725 Walnut Avenue, Winter Park, Fla. John A. Scarlett is with Barium Products Ltd., P. O. Box 920, Modesto, Calif.

Lawrence W. Conant of the Army Engineer Research and Development Laboratories, Fort Belvoir, Va., was recently in the news for winning another award certificate for a helpful suggestion. We have received an Army photo of Larry accepting the honor, which is labeled in part: "ERDL has no objections to the use of this photo in the publication of any MWO or Air Force TO or for procurement purposes." We doubt that The Review qualifies as an "Air Force TO," so if it isn't an "MWO," dear ERDL, we're OOL. Now you've got us doing it! Robert J. Lawthers, Director of Estate Planning Services, New England Mutual Life Insurance Company of Boston, was the speaker at the February combined meeting of the Portsmouth, N. H., Rotary Club and the South-Eastern Life Underwriters of that city.

Mark V. Hamburger is president and part owner of the David Harley Store, known as the Boston Store, Pawtucket, R. I. In an illustrated article in the *Pawtucket-Central Falls Times*, Mark expressed confidence in the continued success of the operation and pledged the maintenance of high standards. He has been associated with some of the country's largest department stores ever since he gave up his chemical engineering work a few years after graduation. He served five years in World War II and held the rank of major. He has recently been a consultant on store merchandising, advertising, and expense control.

In the Second Generation at M.I.T. Club, Malcolm M. Jones '57, son of the late S. Murray Jones, has helped make an excellent *a cappella* recording as a member of the Technology group known as the "Tecthonians." In the Junior League of the Class, John Daniel Crecca, Jr., son of Captain John D. Crecca, U. S. Navy, retired, and Mrs. Crecca of Elizabeth, N. J., recently wed Miss Jodie Alice Fischer of Charleston, W. Va.

A notice from the Institute reveals that another innovation started by the pioneering Class of 1921 is being officially adopted by M.I.T., namely the designation of the 40th reunion as the bic anniversary (in addition to the 25th) instead of the 50th, as your Class officers decided and advised you some time ago. Our bic party in 1961 will therefore be favored with the first official Institute recognition of the 40-Year Class. You are urged all the more to put the date down on your calendar and plan to be with us, not only to observe our 40th anniversary but also to help celebrate the 100th birthday of M.I.T., which occurs at the same time. Meanwhile, remember two timely items and act now: first, send your contribution to this year's Amity Fund; and second, join us at Cambridge for Alumni Day and the Pops on Monday, June 16. See you there! — CAROLE A. CLARKE, *Secretary*, Components Division, International Telephone and Telegraph Corporation, 100 Kingsland Road, Clifton, N. J. EDWIN T. STEFFIAN, *Assistant Secretary*, 11 Beacon Street, Boston 8, Mass.

1922

Preparing the June notes during an April snowstorm is somewhat difficult, but

I am sure that all will be forgotten by the time this issue is published. Speaking of "Snowstorming," Robert H. Brown and Fred Dillon were on the welcoming committee when I went to Worcester to speak to the M.I.T. Club of Central Massachusetts on the subject of "Brainstorming." I was especially complimented by the attendance at the meeting of Ted Miller from New York and Bob Tonon from Boston. There was time the next day at the Institute to do some planning for the '22 Alumni Day meeting on June 16 with Lobdell and his Alumni Corridor gang.

Parke Appel has written telling of a combined letter-writing group session at the Faculty Club to send out the final pitch of the year for the Alumni Fund. Those asked to attend include Bob Brown, Yard Chittick, James Duane, Earl H. Eacker, Warren Ferguson, G. Dewey Godard, Oscar Horowitz, Roscoe Sherbrooke, Edwin A. Tarkelsen, Robert Tonon, and Frank Wing. As an added attraction he will show about 100 colored slides of the 35th reunion. Our Class has made a remarkable record of participation in the 1958 Alumni Fund, contributing a total of over \$50,000. 60 have contributed \$100 or more. In addition we have \$41,000 pledged for future payment. All this comes from 246 of our 793 active Alumni. How about the remaining 547 getting in on the act?

Clate Grover has sent a note as follows: "Crawford H. Greenewalt, President of Du Pont, to be McKinsey Foundation Lecturer for 1958 at Columbia University. He will deliver three lectures in April and May on individuality in the business society." George Dandrow has forwarded an interesting economic discussion on the year 1957 and the future stating that, in the next 25 years, private debt will easily climb to the \$300 billions accompanied by a 40 to 50 per cent increase in the price level. His company brochure, entitled *Asbestos*, is most informative and attractive. During George's three weeks' tour south of the border, he has prepared the following report: "I had a pleasant luncheon and visit with Arturo Ponce-Canton (Calle 31 Number 110, Colonia Mesico, Menda Yucatan) here in Mexico City during the M.I.T. Club of Mexico 10th Annual Fiesta. He was visiting with his wife Ana Maria de Ponce from their home in Merida. Last year they were hosts to Ted and Janet Miller and other visiting Alumni over to see the famous ruins of their homeland. Arturo has two sons and one daughter; both boys are engineers — Arturo, Jr., M.I.T. '47 and Pedro, Rensselaer Polytechnic Institute. Both boys are married, live in Merida, and have at this writing presented their happy parents with two grandchildren. Daughter Annette enters the blissful state of matrimony this May 31. The lucky boy is Manuel Trantecon from Vera Cruz. Annette graduated from Wellesley. Arturo has pleasantly combined his Course II degree with Course XV. In addition to many civic and church activities, he fills in his schedule as president and general manager of *Cerveceria Yucateca* (*Carta Clara Beer*); president and director of *Banco Yucatan*; and, president of *Hotel Merida*. Arturo's full and busy life on all fronts agrees with him; he is in fine fettle and one of the distinguished

sons of '22. On the business front, he sees a period of some readjustment and is a long-range optimist!"

Archibald F. Robertson has sent a report in free verse entitled "A Sunday Afternoon" and an interesting letter on his activities. New addresses recently received: Richard P. Schonland, 18815 Greenhaven Street, Covina, Calif.; Harold L. Humes, Rosedale Road, Princeton, N. J.; Minot R. Edwards, 26 Hilltop Road, North Weymouth 91, Mass.; David R. Shotwell, R. D. #1, Birdsboro, Pa.; Joseph Greenblatt, 915 Hunters Lane, Oreland, Pa.; Clyde P. Brockett Postlag-gernd Hauptpostamt, Bregenz, Austria. — WHITWORTH FERGUSON, *Secretary*, 333 Ellicott Street, Buffalo, N. Y. C. GEORGE DANDROW, *Assistant Secretary*, Johns-Manville Corporation, 22 East 40th Street, New York 16, N. Y.

1923

Coincidental with the arrival of this issue of *The Review*, we will be attending our reunion at The Pines, Cotuit, Mass., June 12 to June 16. A resumé of that outstanding event will be printed in the first issue of *The Review* next fall. In the meantime, Penn Howland and his committee are doing a splendid job in making preparations to assure our comfort and entertainment.

"There is nothing on the business horizon we cannot lick." Thus spoke Robert C. Sprague, XIII-A, Chairman of the Federal Reserve Bank of Boston and Chairman of the Board of Sprague Electric Company, at the Annual Banquet and Convention of the Institute of Radio Engineers at the Waldorf Astoria Hotel, New York City, March 26. Right you are, Bob; and the Class will agree that there is nothing beyond the horizon that we cannot lick if we will really put our minds to it.

Royal Sterling, II, President of the Cinder Products Corporation at Providence, has two interesting observations: one, that Cranston, R. I., is one of the two cities in the United States that has a 100 per cent record for Alumni donations; the other, that he and the missus made a pleasure-business trip to Greece, the Island of Yali, and then to Italy, Switzerland, Germany, and England. His company imports volcanic pumice stone for insulating building block material. Harvard, Brown, and other Universities use it, but good old M.I.T. still has to be shown. It takes salesmanship, Royal; the Institute has a lot of sales resistance.

Ray Bond, XV, translated a wedding announcement from Bernardo Elosúa, I, as follows: "Mr. and Mrs. Bernardo Elosúa of Monterrey, Neuvo Leon, Mexico, together with the parents of the bride, announced the marriage on February 15 of their second son, Luis, to Irma Garza at the Parish of Our Lady of Lourdes."

Thomas B. Drew, X, and Mrs. Drew announced the engagement of their daughter, Emilie, to Mr. Robert Lewis Cavanagh of Milton and Chilmark, Mass. Emilie is an Alumna of the Institute, Class of 1956, and is presently engaged in research there at the Department of Food Technology (Bernie Proctor please note). Mr. Cavanagh graduated from Harvard

in '54, served in the Army from '46 to '48, and is presently engaged in research at the Mallory Institute of Pathology in Boston. Tom lives in White Plains, has his summer home at Temple, N. H., (excellent judgment) and is professor of chemical engineering at Columbia University, New York City.

Those Chinese Reds are still chasing our classmates. First they charged Cheng Hsin-Ling X, Vice Governor, with alleged anticommunist and antisocialist crimes and now they are after Tseng Chao-Lun, X, who is one of the top chemical scientists in that country. We send both of our classmates greetings and congratulations. They must have been doing a good job to deserve such attention.

We regret to report the passing of Malcolm Johnson, V, Executive Vice-president of the Van Nostrand Company, Inc., at Princeton last February. Among other activities he was a member of the University Club and the Players Club of New York, the Metropolitan Club of Washington, and the Nassau Club of Princeton, N. J. Surviving are his wife, a daughter, two sons, his mother, and a brother. The Class sends its deepest sympathy to them.

Walter S. Anderson, X, Manager of the Hotel and Restaurant Division of the Boston Gas Company, passed away on March 6. He was extremely active in both the New England and the American Gas Associations, where he developed a host of friends. He is survived by his wife and a son, presently overseas in the Army. We send them our deepest sympathy also.

At the Boston Naval Shipyard on March 7, the Navy commissioned a destroyer, the U.S.S. *Mullinnix*. The craft was named after Admiral Henry M. Mullinnix, who received his master of science degree at the Institute in 1923. He was lost in World War II when his flagship, U.S.S. *Liscome Bay*, was torpedoed off Makin Island in the Pacific. His bravery was posthumously recognized by awards of the Legion of Merit and Purple Heart.

Eger V. Murphree, V, President of the Standard Oil Development Corporation, spoke at the Engineering Management Forum at the Hotel Statler, New York City, April 9, 1958. His topic was "Government Industry and Education in Common Effort." William P. Allis, VIII, Professor of Physics at the Institute also spoke on "Plasma Oscillations" during a symposium on Electronic Waveguides, sponsored by the Institute of Radio Engineers. His big day, April 8.

Paraphrasing Professor Haven of Course II, "a copious supply" of water has gone over the dam the last 35 years. One of the sad duties of being secretary is to report the passing of classmates who stood with us in 1923 to receive our diplomas. One of the pleasant duties is to report the achievements of the many distinguished members of the Class who are making names for themselves and for the Institute. We are proud of all of you.

The coming reunion at The Pines, Cotuit, Mass., from June 12 to 16 will be a grand opportunity to renew old friendships, boast of grandchildren, and plan for the years ahead. — HOWARD F. RUSSELL, *Secretary*, Improved Risk Mutuals, 15 North Broadway, White Plains, N. Y. WENTWORTH T. HOWLAND, *Assistant Sec-*

retary, 1771 Washington Street, Auburn-dale 66, Mass.

1924

A tough month in the reporting business. Had it not been for a convivial get-together in April at the Faculty Club, this might have been white space instead. That was a meeting called by our illustrious Class Agent, Frank Shaw, to write convincing (nasty, peremptory, or other) notes to those regular Fund contributors who, this year, seem a bit irregular. The penmen, reading from left to right, were George Knight, Frank Barrett, Russ Ambach, Ray Lehrer, Herb Stewart, Fred Westman, Frank Shaw, of course, and your Secretary. We foregathered in the bar. Everyone seemed in pretty good shape at the moment, but many a rousing toast was drunk to departed ulcers, electrocardiograms, and other indications of infirmities past. Most recent recoveree was Russ Ambach, who has been having a rough time with a detached retina.

To help our president get going on our 35th reunion, we took it upon ourselves to appoint a number of committee chairmen, each man picking his own. Frank Shaw offered his services as chairman of the Committee on Oarless Rowboats; Frank Barrett offered to take care of the oars; Russ Ambach the grease for the oar locks. . . . You know, at the time it was riotously funny! Phil Cohen said he'd be there and then didn't show, so he was unanimously elected chairman, Committee on All Arrangements.

At the March luncheon at the New York Club, there were nine regulars in attendance plus one out-of-towner who stopped by to say "hello," Ted Kenyon, of the Old Lyme (Conn.) Kenyons. The Cardinal was noticeable by his absence, probably traveling around the country as usual. His latest itinerary looked very impressive at first glance, but on second look you noticed things like "Boca Raton Club, Florida" with dittoes under it for several days! We told you a month or two ago about Paul's new job with Hoffmann-La Roche. He's also been honored by the National Vitamin Foundation, Inc., made a V. P. recently. Still looking for the day when some of Paul's vitamins get added to Pret Littlefield's Scotch. Maybe they can team up for a year from June so that as we raise our glasses of Johnnie Walker (fortified with H.LaR. Vitamins D, X, Y, and Z) we can say wholeheartedly, "Here's health!"

From our real long-distance traveler, Deep-Six Simonds, comes a series of post cards. From Paulsboro, N. J., "Here today and gone tomorrow. Where next?" From Harmon Air Force Base, Newfoundland, "Here we go again. Hold onto your hat." Yes sir, no doubt about it, Hank was off on his 16th round-the-world tour. Then, a week after Newfoundland, comes one from Times Square, "Are you familiar with this place?" Well, you can't be right all the time.

In March a big Nuclear Congress was held in Chicago. Chairman of a session on Health, Physics, and Instrumentation was an R. F. Shea. Seems logical that this should be our Richard, since G. E.'s been making him over from an electronic to

an atomic expert, but we could have guessed wrong. One thing Dick would no doubt have understood, a paper given at the Radio Engineers Convention in New York the same month, authored in part by Professor Ernst A. Guillemin. All about Minimum Insertion Loss Filters. The one thing your Secretary understood in the briefing: "It will be shown that, if insertion losses are to be minimized, the use of Tchebycheff filters with ripples greater than very small fractions of one decibel must be discouraged." Should think Ernie would have disliked ending his dissertation on a negative note like that one.

Of course anything the National Advisory Committee on Aeronautics does now brings in the name of its chairman, Jimmy Doolittle, and we get a raft of clippings as a result. Latest was about its new Special Committee on Space Technology, (headed by M.I.T.'s Associate Dean of Engineering, H. Guyford Stever) and it listed among Lieutenant General Doolittle's honors and accomplishments that he was "the first person in history to receive a Doctorate of Science in Aeronautics from M.I.T."

A few years ago Jim Lord, one of our Naval Architecture graduates, left the stone and quarry business (make an interesting story, what happened to our Course XIII men) and went with Remington Rand. He was manager of their Louisiana Ordnance Plant. Now they've shifted him up to Bridgeport where he's with the Electric Shaver Division. From ships to stones to small arms to shavers—that's a lot of shifting! So much for now and until next month. — HENRY B. KANE, Secretary, Room 1-272, M.I.T., Cambridge 39, Mass.

1925

A recent announcement from the Du Pont Company, indicating a number of personnel changes in their development engineering division, notes that Charles M. Cooper, Course X, has become assistant division director in charge of the Engineering Research Laboratory. Charles has been with Du Pont since 1936, when he started as group supervisor in the process section of the Belle, West Virginia, Works. In 1940, he was transferred to the Engineering Department to take charge of chemical engineering research in the technical division at the Experimental Station. In 1942, he was loaned to the University of Chicago and placed in charge of the engineering phases of the plutonium development work, after which he returned to Du Pont in 1945 as director of what is now the Engineering Research Laboratory.

Other news this month is absolutely non-existent.

We do note with sorrow the passing of Stephen V. Zavoico, whose death was reported on April 5, 1958, in Stowe, Vt. The class records indicate he was with Bowser, Inc., in Chicago, pump manufacturers, although the *Boston Herald* report indicated he was president of the Hartford Steel Ball Company with headquarters at the time of his death in Hartford, Conn. — F. L. FOSTER, Secretary, Room 5-105, M.I.T., Cambridge 39, Mass.

1926

This Sunday morning we are back at Rockport after missing several week ends during my bout with the measles. It is a most beautiful, bright, sunny morning with only a few clouds on the southern horizon. The weather has again been vicious this week and the sea is coming in long powerful swells, indicating that they started from a great distance. As they break against the rocks and send spray high into the air, I am chagrined that I left my cameras up town. It is not often that we get these long swells that provide good possibilities for surf pictures long after the storm is over and the sun is shining brilliantly. Most of our storms during the summer are local; and when over, the wind shifts to another direction and flattens the sea out very quickly. Oh, but let's get on with the notes.

I saw Barney Billings a couple of nights ago at the annual dinner of the Chemical Club of New England; but as he was some distance away and in a banquet hall filled with 700 people, I never did catch up with him. Barney came back to New England about a year ago to join the Development Department of the Merrimac Paper Co. in Lawrence, Mass. Another New Englander who recently made news is Ed Huckman, who joined the Foxboro Co. a year after graduation and has been active in their sales department as a representative in Tulsa, Dallas, St. Louis, and New York. Ed was recently named assistant field sales manager of Foxboro's New York office, and we extend our sincere congratulations.

We recently picked up some additional information about John Nicholas, who is professor of agricultural engineering at Pennsylvania State. We some time ago reported about his activity in the field of frozen food storage, and now we have a bit of information about the Nicholas family. John's son, Richard, received his doctorate last June from Michigan State. At the same time another son, Winslow Channing, was receiving his M.D. from the University of Pennsylvania. His third son, Bruce Owen, will graduate from the College of Education at Pennsylvania State this coming June. John and his family get back to New England every summer to spend a month at Sagamore Beach on Cape Cod and do a little flounder fishing just off the entrance to the Cape Cod Canal.

The clipping services have provided us with a bit of information about George Cohen, who was born in Lowell, Mass., and lived there during his undergraduate years. George runs a chain of drycleaning establishments in New York City with headquarters at 27 West 35th Street; his is, according to this article, one of the best establishments of this type in New York. This may be good news for some of our New York classmates, if they find the general quality of such establishments as unreliable as I have found them in Boston. George has a son who graduated from the Institute and who is now a medical student at Harvard.

Last fall I reported to you that Louis Darmstadt was running for alderman in Norwich, Conn. I can now report that he made it. Louis and I had been talking over the telephone about attending the

fiesta of the M.I.T. Club of Mexico City in early March. I can also report that Louis made it; and as you know from the last issue of *The Review*, I didn't. Louis is vice-president in charge of Research and Engineering of The American Thermos Products Company of Norwich, Conn., manufacturers of the famous thermos bottle, and incidentally celebrating their 50th anniversary. Elton Staples was in town recently and gave us a ring. Elton is executive vice-president of The Hevi Duty Electric Co. of Milwaukee. Elton's son, Charles, is a junior at M.I.T. and is on the Institute Committee and president of the Glee Club. His second son is in the Naval Air Force, stationed in Hawaii after having graduated from Purdue. We hope that the next time that Elton gets to town we will at least be able to have lunch together.

And speaking about having lunch together we recently had a letter from our Class President, Dave Shepard, who was headed for the Middle East, suggesting a get-together for lunch of the class officers, which include Dave, Pink Salmon, our Class Treasurer, and your Class Secretary. This letter was followed in a few weeks by another letter stating that Dave's trip to the Middle East had been postponed, making it necessary to postpone our little get-together. Mentioning Pink Salmon's name brings to mind that he has recently taken a new position with Coffin and Burr, one of Boston's long established investment houses. Congratulations and success to Pink in his new capacity.

This morning we have been dictating the notes on a new dictaphone "Dictet" which is a small, self-contained machine using transistors, mercury batteries, and thin Mylar recording tape. We have found it most convenient; and the only feature it seems to lack is a good measuring system for determining the amount of dictation. Consequently, I do not have a very good idea of the length of this issue of class notes. I have a feeling that they may be shorter than in the past, which is good because I never want to make them long-winded. The next issue is the final issue of the season, and we hope that by the time it comes out we will have seen many of you at the Alumni Day festivities. — GEORGE WARREN SMITH, General Secretary, c/o E. I. du Pont de Nemours and Company, Inc., 140 Federal Street, Boston, Mass.

1927

Over the years I have been in occasional touch with Edward D. Stone. In fact he is one of the solid group who have written in from time to time to tell of their activities. Somehow or other the account of him in the 25th Anniversary Book is embarrassingly brief, particularly when compared with the outstanding article in February *Vogue* featuring his home, and nothing less than the cover article in the March 31 *Time Magazine* featuring his career and contributions to the architecture of today.

Alfred L. Jacobson has been re-elected to the board of assessors of Malden, Mass. He will not find any difficulty in getting acquainted with his duties, as he has been

working on the board for nearly 20 years. During working hours he is a general construction and building contractor.

At the Institute of Radio Engineers Convention in New York in March, Frank Massa was coauthor of a paper on the measurement of the power radiated by the transducers. The program explains: "Knowledge of the acoustic energy present in the sound field is important to both the user and the manufacturer of ultrasonic equipment. As an example, one current problem is the determination of the intensity of ultrasound in a confined vessel, such as an ultrasonic cleaning tank. Such problems and their possible solutions will be discussed."

When the Volpe Construction Company of Malden celebrated their 25th anniversary, many of the news clippings featured their vice-president and general manager for the past 17 years, Frank Marcucella.

Lewis Baker dropped by to say hello after an extended business trip to practically all of the South American countries. He has been working on meat packing problems.

Sam Auchincloss reports that his Tracerlab, Inc., is now in the black with an encouraging number of proposals outstanding with potential customers. — J. S. HARRIS, *Secretary*, Shell Oil Company, 50 West 50th Street, New York 20, N. Y.

1928

An item in the *Laconia*, N. H., *Citizen* for February 26, 1958, tells us that our classmate, Samuel B. Smith "now heads the electrical engineering division of Ebasco Services, Inc., of New York City, one of the foremost engineering organizations in the world." Sam started out with the Hudson Gas and Electric Corp. in Poughkeepsie, N. Y. In 1935 he left to go with the New York City Board of Transportation. He has been with Ebasco since 1937 assigned to power system studies, and he assisted in the formation of the Northwest Power Pool during World War II. In 1955 and 1956 he headed a group of Ebasco engineers in Australia directing a 17-month study of Australia's major power project, the Snowy Mountain hydro resources. Congratulations to you, Sam, and good wishes for continuing success!

We were very pleased to hear from Bill Hurst. Bill wrote to Ralph Joep and sent along a copy of his scientific paper which will be published by the American Institute of Mechanical Engineers. You may recall that Bill is a consultant in a rather unique field, that of petroleum engineer — he evaluates oil lands. Bill's technical paper shows that he has lost none of his skill as a mathematician and scholar, attributes that have helped to make him such a success in his profession.

Tom Harvey sent in a note to tell us that his son Thomas G., Jr., will graduate from Miami University (Ohio) in June and will then enter the Navy for three years. This will make it impossible for Tom to be with us at York Harbor. Tom also has a grandson two and one-half years old who already is showing the Harvey vigor. It was nice to hear from you, Tom. We hope you will make it to the 35th!

We are pleased to learn that Dick Davidson is now investment vice-president of Boston Insurance Company and Old Colony Insurance Company. Dick has been with these companies since 1942 and has the responsibility of managing a very large investment portfolio. Our congratulations, admiration, and respect to you, sir!

Ben Miller wrote Jim Donovan a very nice letter. Ben is one of our well-known class M.D.'s (attained at Harvard after graduating from the Institute as a chemical engineer), and has had a busy career in medicine doing both research and teaching. At present he is director of the May Institute for Medical Research in Cincinnati. In addition, he is associate professor of experimental medicine at the University of Cincinnati College of Medicine and is on the staff of the Cincinnati Jewish Hospital.

Included in Ben's numerous writings are his recent book, *The Complete Medical Guide* (which has been very well received), and recent popular articles in *Parents Magazine*.

Zelma (Mrs. Miller) is, in her own right, a Ph.D. in biochemistry and engages in professional work besides managing an active family. Daughter Susan is a sophomore at Barnard College, Betsy is a sophomore in high school, and eight-year-old Joey has curiosity in mechanical things and already is interested in M.I.T.

From Fritz Rutherford, VI-A, comes a brief but nonetheless welcome note. Fritz says that he will have to be out of the country this summer on a consulting assignment and can't be with us. However, he sends his best wishes to everyone and will be thinking of us.

Ralph Joep, just back from a trip to St. Louis, reports meeting with Bob Joyce. Bob is planning to attend the reunion and expects to bring his family. Ham Bacon wrote to send us his greetings from Dallas, Texas, where he is director of Research and Development for the Lone Star Gas Company. Much of his work is in gas transmission line research, and he is chairman of the American Gas Association Committee on this subject.

Dick Hoak has given us a fine newsy account of his current activities. He is still at Mellon Institute in Pittsburgh where he holds the position of senior fellow. Dick spent a year of graduate study at the Institute to receive his S.M. degree, then later won his Ph.D. at the University of Pittsburgh. His work has been in sanitary engineering and waste treatment; his numerous technical papers and patents are indicative of the eminence he has attained in this field. We hope to write again on some of Dick's interesting technical accomplishments, which are extensive and important enough to make very good discussion in themselves.

Dick's work has required him to travel a great deal and to participate in many professional society activities. When he has time for himself and family they live a rustic life on 18 acres of woodland 20 miles north of Pittsburgh. Outdoor work helps to keep him in good form. Next January the Hoaks expect to make a visit to Puerto Rico to enjoy the tropical sunshine as a change from wintry weather. It was wonderful to hear from you, Dick,

and we still hope that some change of plan will permit you to be with us at York Harbor.

With deep regret we must report that Carlos Ferre died in Puerto Rico on March 20, 1958. Carlos had planned to join us in June, and a number of his friends had expressed their anticipated pleasure at seeing him again. As these notes were being submitted, we had news also of the death of Robert L. Jones, 2d, on March 14, 1958. Bob was graduated in Course II, and was owner of his own company, the Air Comfort Corp., in Washington, D. C. — GEORGE I. CHATFIELD, *Secretary*, 100 East 42nd Street, New York 17, N. Y. WALTER J. SMITH, *Assistant Secretary*, 15 Acorn Park, Cambridge, Mass.

1929

I said last month that Frank Mead had agreed to chairman the 30th reunion. Frank is getting his committees together to lay plans for the reunion. Again, as I said before, I am sure Frank will welcome any thought you have on location for this reunion.

Your Secretary had a long letter from Len Peskin, who reports as follows: "As you know, I am president of Thermal Research and Engineering Corporation, designers and manufacturers of a variety of heating equipment. Our business is in its ninth year; and considering the fact that we started with just an idea on paper and are now doing over one million dollars worth of equipment sales per year, I suppose this would be considered some kind of progress. We have representatives in all sections of the North American continent and have three foreign licensees.

"I have two grown sons, one of whom graduated from M.I.T. two years ago in June. I had lunch with Bob Philippe, who is in charge of special engineering in the Research and Development Branch of the Army Engineers Corps. He has been responsible for a considerable program having to do with Arctic operations and for the past several years has spent a good deal of his summertime in the vicinity of Thule, Greenland. Bob was involved in an airplane crash up there last summer which would make quite a story in itself if you could get him to tell you about it. He had a rough period for a while, but he is in good shape now; and I suspect he is once more making plans to go into the Greenland area."

Ed Powley reports that he is now region manager, covering New York, Connecticut, and New Jersey, for City Service Oil Company. Both of Ed's children are married and living in Jersey. Ed also reports that he was in Boston last fall to attend Art Marlow's son's wedding. No news from Art.

A note arrived from Phil Lamb, who reports he is president of Endura Corporation, who make a complete line of latex impregnated and coated paper products, mainly for the pressure sensitive tape people. He reports his daughter Valerie graduates from Smith this June.

Elmer Skonberg puts in a vote for on-campus reunion. He goes on to say that "North or South Shores may appeal to the locals, but we country boys like to get to town."

Hunter Rouse reports as follows: "Nothing new but an effort to out-Hamlin Larry himself: managed a lecture tour around South America last fall, and next August will take my family to Europe on a National Science Foundation fellowship for a year. No births or marriages for a long time; but my children are 24, 18, and 14, and anything can happen."

And a couple of press releases: George Burke is in the contracting business and just landed a job for the Hale Hospital in Haverhill. In business with George are his two boys, John and George, Jr. He is in business in Swampscott. Another press release: Wendell Kraft, Captain, U. S. Navy (retired), has been named assistant to the President of Trinity College here in Connecticut. Wendell received his S.M. in '29, after graduating from the Naval Academy.

I must say I am pleased with the responses which are coming in now with information for notes. Please keep it up. — FISHER HILLS, Assistant Secretary, Dewey and Almy Chemical Company, 62 Whittemore Avenue, Cambridge 40, Mass.

1930

Hope to see many of you at Alumni Day this year. It's being held Monday, June 16, 1958, and will be all on campus again, with the Boston Pops Orchestra performing for us in Kresge Auditorium in the evening. There are details elsewhere in this issue of The Review.

We heard from Dick Barnes recently. He's been out on the West Coast since 1950 in the capacity of manufacturers' representative covering the entire West Coast for several Eastern manufacturers of papermaking machinery. Previous to this, he spent some 15 years with International Nickel Company in New York, and also had three years as a Naval Reserve officer in World War II. Howie Gardner is near him, in Antioch, and they get together occasionally. Dick says there are many Tech men out there but so far Howie is the only other '30 mate he has met. Dick has a son in high school now and hopes that he, too, will be a Tech man some day. He sends his regards to all.

Reg Bisson wrote us that he was appointed to the M.I.T. Educational Council on January 20, 1958. Congratulations, Reg. Ken Bucklin recently changed jobs at Radio Corporation of America but still lives in Short Hills, N. J. He is now manager, Engineering, Receiving Tube Operations, rather than manager, Receiving Tube Marketing.

Sid Kaye has been elected president of the Parker Hill Medical Center here in Boston. Sid has also been a member of the American Public Health Association for almost 30 years. Norwood Kenney participated in the Winter General Meeting of the American Institute of Electrical Engineers at the Hotel Sheraton-McAlpin in New York February 2 to 7, 1958. He gave a paper (with two others) entitled "Corrugated Metallic Cable Sheath."

Our Class President, Jack Latham, who is vice-president of Engineering at Arthur D. Little, Inc., was recently elected to the board of directors of that industrial research company. Sig Linderoth has writ-

ten to bring us up to date on his status. After nine and a half years on the faculty of Iowa State College as professor of mechanical engineering, he has resigned to accept a position as associate director of Research-Engineering with the Central Research and Engineering Division of the Continental Can Company, Inc., in Chicago. After June 1, 1958, he will be living at 12313 South 90th Avenue, Palos Park, Ill. Sig says this is a very delightful rural suburb of South Chicago which reminds him very much of New England. His daughter Janet, a freshman at Middlebury College in Vermont, made the Dean's list. His youngest daughter is in the ninth grade. I was very sorry to have missed Sig the day he dropped into my office (March 21, 1958) to say "hello." Sig sends kindest regards to all.

The *Lynn Item* and *Lynn Telegram* (Lynn, Mass.) newspapers recently carried a human interest story about our classmate John Scheuren. At the present time, John is a group leader, stationed with the #3 Operation Deep Freeze of the Navy Air Force Division, working on the International Geophysical Year at McMurdo Sound in Antarctica, and communications from that remote corner of the earth are considered poor. However, it seems that the Greater Lynn Chapter of the American Red Cross was instrumental in relaying a happy birthday message to his mother recently, and she was very grateful for their concern and interest. Here is how it was done. A ham radio operator working in conjunction with the Syracuse, N. Y., chapter of the Red Cross picked up the message and relayed it to this N. Y. chapter, which in turn, relayed it to the Lynn, Mass., chapter. John's wife and children reside in Cohasset, Mass.

The *Springfield* (Mass.) *News* recently carried an article about our classmate Elroy Webber. The article said that Elroy is becoming somewhat of a byword in *House Beautiful*, the monthly "dedicated to the business of better living." Two homes designed by him in recent years have been showcased in its pages and now, in the January, 1958, issue, a West Hartford, Conn., house designed by him is featured; all of which shows unusual interest in his work. The article states, though that his main concern is with school construction and that his stamp has been placed on several schools in the Springfield area.

We received a couple of newsclips on our classmate W. Maxwell Wheildon, Jr., one from the *Worcester Gazette* and one from the *Framingham News*. The items stated in part that Maxwell and a co-worker, L. Peter Jensen, are credited with key roles in the development of Rokide "A," the Norton Company's aluminum oxide coating being used on the satellite "Explorer." They are the men behind a process that's helping to keep America's earth satellite in orbit. Maxwell joined the Norton Company (in Worcester, Mass.) in 1937. Responsible for many company-held patents, he was a key figure in the development of the Norton ceramic cutting tool. He has been closely associated with Professor P. W. Bridgman, Harvard University's Nobel prize winner, in high-pressure research.

I regret to inform you of the death of

three of our classmates — Edward Fulton of Saint Louis, Mo., on November 12, 1957; Ralph Aubrey Jeffers of Elkton, Md., on January 26, 1958; Irvin R. Mitchell of Saint Louis, Mo., on February 5, 1958. To their families goes our deepest sympathy.

We have been notified of the following changes in address: Robert L. Barrett, Jr., 913 Washington Street, Dorchester 24, Mass.; Clinton F. Burns, 4750 Chevy Chase Drive, Chevy Chase 15, Md.; Colonel Harold J. Conway, 200 Valley Brook Drive, Falls Church, Va.; Albert B. Deyarmond, 2222 Camino Del Rosario, Santa Barbara, Calif.; Jules A. Larrivee, 10616 Vanora Drive, Sunland, Calif.; Dr. Charles H. Lutz, United Aircraft Corporation, Hamilton Standard Division, Broad Brook, Conn.; Hugh Mulvey, 2704 Quaint Street, Secane, Pa.; Dr. Morris F. Shaffer, 2900 Napoleon Avenue, New Orleans 15, La.; Reverend Wilfred L. Steeves, 231 Second Street, South Amboy, N. J.; Whitney Weinrich, Bayfields Road, Harwood, Md. — GEORGE P. WADSWORTH, Secretary, Room 2-285, Department of Mathematics, M.I.T., Cambridge 39, Mass. RALPH PETERS, Assistant Secretary, 249 Hollywood Avenue, Rochester, N. Y.

1932

Just a year ago we had our great reunion. I am sure that many of us are looking back at this time of the year to the pleasant companionships which we had at that festive occasion. We shall be seeing some of you at the Alumni Day festivities this year and hope that this will serve to keep our interests alive in M.I.T. and in our Class. Bob Semple has sent out his letter appealing for funds again and also for news of classmates for these class notes.

One of the men who could not attend our reunion has been in the news lately. He is Ivan M. Muravjoff, XIII, of Moscow. He and some others from M.I.T. are credited with having pushed Soviet aviation ahead so fast, including the new civilian jet plane, the TU-114 which is expected to inaugurate nonstop flights between Moscow and New York in the fall. Too bad these fellows could not have stayed on our side!

Talking about airlines, I had a letter from Hi Clements, IX-A, who is in the investment business in Rochester, N. Y. Poor fellow had to take his wife and two daughters to Hawaii for two weeks to attend a special meeting of the stockholders of Hawaiian Airlines in February. They are considering buying DC-6C equipment for military and commercial charter to the West Coast and the Far East. He states: "Hawaii is unbelievable in its weather and beauty. The whole time there I didn't see a screen door or window or a bug to swat." I could envision this as an invitation to our Class to charter one of his planes for our 30th reunion in Hawaii.

We have a new president in our group. He is Tom Regan, XV, who has recently been elected president of the General Box Company at Des Plaines, Ill. In connection with the announcement which I saw, the statement was made that "General Box will begin an expansion program aimed at

increasing corrugated box volume and developing new markets for wirebounds." Tom started with that company in 1935 at their Winchendon, Mass., plant and worked his way up as a salesman, plant manager, sales executive, and a few years back was made vice-president and sales manager. All of us wish Tom the best of success in his new role as president of General Box.

Albert W. Dunning, II, has left his associations of many years' standing, the Shawinigan Resins Corporation and its parent, the Monsanto Chemical Company, for a new position on the market research staff of Plastic Coating Corporation of Holyoke, Mass. Al was the former director of marketing for Shawinigan Resins Corporation of Springfield and has been very active in the development of commercial markets for plastics and resins for specialized applications in the paint, adhesive, textile, paper, and other industries. For three years he served Monsanto in Japan with their Monsanto-Kasei works. He certainly has had an interesting life with all of this experience added to his many years as a Naval aviator.

Joseph T. Cimorelli, VI, has taken another step up the ladder with the Electron Tube Division of Radio Corporation of America, in Harrison, N. J. He is the new manager of manufacturing in receiving tube operations of the entertainment tube products department. This step came from that of manager of engineering in that group and previously assistant to the vice-president in charge of Production Engineering in Camden, N. J. It looks as if our boys are still going to town!

Don Gilman, X, has come through with a very interesting letter. I wish that more of you would send information along on classmates whom you meet. Don's letter reads as follows: "George Falk, Cas Day, Phil Benjamin, Art Lowery, and I met for dinner Tuesday evening, April 8, at the Stockholm Restaurant at the Worcester, Mass., Airport to sign letters to our classmates for the Alumni Fund. George Falk is president of the Independent Lock Company of Fitchburg, Mass., just returned from a month's cruise in the Caribbean and, therefore, couldn't eat much because his wife has put him on a diet. Cas Day is president of his own firm, the Hampden Manufacturing Company in Palmer, Mass. (plastics fabrication), and a proud grandfather. Phil Benjamin is assistant purchasing agent for American Optical in Southbridge, Mass., and has put on so much weight he could no longer high jump over a dachshund. Art Lowery is marketing manager for Wyman-Gordon Company. I have just been made president of Warren Pumps, Inc. Art Marshall, lawyer in Springfield, Mass., telephoned the restaurant to apologize for his absence due to the fact that he was packing for an extended trip to Europe and Israel. Alan MacDonnell, Vice-president for Marketing and Product Development, Gilbert and Barker Manufacturing Company, Springfield, Mass., missed the meeting because he was in Fort Wayne on business. George Kerisher, factory representative in Boston, missed the meeting because he was chasing down a sales prospect. Dick Marcus, American Biltrite Rubber, also wrote that he would be in Europe at the

time." — ROLF ELIASSEN, *Secretary*, Room 1-138, M.I.T., Cambridge 39, Mass.

1933

Our 25th is practically here! In both quality and numbers, ours promises to be the best and the biggest yet. If you have evinced any interest, you have now received the complete story — if you have not indicated that you may come and now find is possible, write, wire, or preferably telephone your Secretary and we will promptly dispatch all necessary forms. It's not too late.

The Class Record which Ed Goodridge is preparing (with your generous cooperation in providing all the raw data) will serve as a permanent memento of our 25th. Some of the snapshots are priceless. I join Charlie Bell and a few others in the Class in the remark, "We hate men with hair." Just envy, son — but more importantly, what is your formula? Speaking of the hard facts of life, your Reunion Committee offers apologies to the unmarried members of the Class whose "wives" received Easter greetings. While we don't want to start any rumors in your neighborhood, we had no practicable way of polling the class to identify all the bachelors. Of course, we might seize the offensive (and be offensive) by offering the admonition "It's later than you think," but we prefer to be contrite about any erroneous assumptions about your state of matrimony.

Your Committee does regret conflicts between the reunion and those all-important family milestones: a couple of our classmates have confided that they will become fathers (for the nth time!) about mid-June; several have young ones graduating from secondary school or college; and we assume a few will be the proud father of the bride or "also attended the ceremony" father of the groom. For the coeds who are listening, and who are principals in June weddings, we know you will be both proud and much noticed whether you are mother of the bride or groom. We shall miss you at the reunion and we understand completely that family milestones take precedence over everything. But if you can make any part of the reunion, come on to Cambridge and let us help you recover. Some members of the Committee profess to be experts in both recovering and helping others to recover — this refers particularly to fathers of the bride.

Congratulations to Emerson Cummings, II, on his promotion to lieutenant general. Emerson is stationed at Fort Myer, Va. Congratulations also to Warren Henderson, II, on becoming a grandfather for the third time. Warren spends his time running a beef breeding farm in Exeter, N. H., with time out periodically to go to Cleveland and Pompano Beach, Fla. A sort of roving representative of the Class, Warren is always willing to pitch in and help out. Recently in Pittsburgh we had the pleasure of spending an evening with Maxwell D. Millard, VI-A, who recently became administrative vice-president of U. S. Steel, with particular responsibilities for the company's overseas operations. Speaking of overseas activities, a clipping from the *New Haven Journal-Courier* re-

ports on two of our Russian classmates, A. I. Kurganoff, II, and I. I. Solovieff, VI, who are rated by American intelligence as being at the very top of Russian aeronautics. Apparently both of these men were active in the design of the jet plane TU-114, which is scheduled to make nonstop trips from Moscow to New York this coming fall.

Wilber B. Huston, VIII, presented a paper at an Aeronautical Conference in Copenhagen last year on a trip which took Bill to Germany, Denmark, Holland, and France. Bill and his wife are the proud parents of Patricia Elizabeth, born on March 17, which now brings the number to five children, including four boys. Patricia's advent will prevent Bill's wife from coming in June, but Bill expects to be here himself. Friends of Outerbridge Horsey, XV, will be glad to learn that he is now minister (second in command) at the American Embassy in Tokyo. This is one of the largest and most important embassies in the Foreign Service. We receive frequent press clippings about John Trump, VI, reporting on all of the fine work that John is doing in the medical field. In recent months, John has presented papers on "Properties and Applications of High Energy Electrons" and "Barium Absorption Pumps for High-Vacuum Systems." John has worked most effectively for the last several years in training doctors in the use of high-energy machines for the treatment of deep-seated tumors.

Werner Bachli, XIV, reports from Sao Paulo, Brazil, where he has been a representative for General Electric since 1952. Werner will return to this country early in June and will be with us here in Cambridge for the reunion. Clippings from a variety of papers around the world report that Richard C. Molloy, XVI, executive engineer of the research department for United Aircraft, spoke recently on "Aviation's Future: Flights of Fact or Fancy." Dick has been with United Aircraft since 1935.

Ivan Getting, VIII, Vice-president of Raytheon Manufacturing Company and world-renowned authority on radar, has been named recently to the "nuclear brain-trust" to advise the weapons subcommittee of the Congressional Atomic Energy Committee. Rodney D. Chipp, VIII, was recently appointed manager of Systems Engineering at Federal Telecommunication Laboratories. Rodney's wife is an engineer in her own right (a graduate of Newark College of Engineering and Stevens Institute of Technology) and is president of Newark Controls Company. Edward S. Coe, III, appeared prominently in a recent issue of the *Ford Highland Park News*. Ed is supervisor of Ford's Material Laboratory. Mrs. Coe, a Radcliffe graduate, coauthored the book titled *The Challenge of Being a Woman*. The Coes have two children: Priscilla, eight, and Ted, six.

William Barbour, Jr., VI-B, served recently as chairman of the session on "Commercial Use of Radio Tracers" at the fourth Nuclear Engineering and Science Conference in Chicago. Robert Mills, IV, was recently appointed an educational counselor in Richmond, Va. Bob is also vice-president of the M.I.T. Club of Vir-

gnia. He promises to return for the reunion in June. Paul F. Genachte, VI, director of the atomic energy division of the Chase Manhattan Bank in New York, lectured recently on the subject of "Atomic Energy: Today and Tomorrow" in Burlington, Vt., at a meeting at the University of Vermont.

Colonel Douglas G. Ludlam, II, currently commanding officer at the Springfield, Mass., Armory, expects to retire from the Army by this summer and return to a post in private industry. Muriel Wilbur, VII, has been appointed secretary of the health division of the Council of Community Services of Providence. One of the reunion questionnaires brought news that William E. Potter, I, has been serving as governor of the Canal Zone for the last two years. Holding the rank of major general, Bill came here after graduating from West Point.

One more final reminder: do your best to join us here on campus on June 14. — R. M. KIMBALL, Secretary, Room 3-234, M.I.T., Cambridge 39, Mass.

1934

This spring I spent a very pleasant day with John Westfall and his partner in business Dexter Chafee, of the Westfall-Chafee Laminates in Barrington, R. I. John has been doing pioneering work in the forming of laminates for many years and for the past few years has been really pushing to get a small business up off its back and into a successful operation. Their backlog of orders is now good, and they seem to have a unique know-how in forming Fiberglas-reinforced plastic structures from teacup size up to tanks about as big as you would want. At this point John feels strongly about wanting to keep the company small, and I got the impression that he would rather find and develop new products and solve problems than just set out to mass produce the same kind of an item month after month.

John certainly knows small business from top to bottom, and he is not afraid to get in and work with the best of his crew. He obviously likes to make business policy decisions, and yet he also likes to work off the normal frustrations of business experiences by turning his hand to welding up a new jig and ending with one that probably costs the business about a hundredth of what it would if he bought the thing. Their business is too small yet for an international sales manager; but just give him time, because it looks as if they are on the right track. Work days of 24 hours for John are not uncommon; but he seems to thrive on it, and is just as gracious and relaxed as he was a good many years ago. He and his charming wife were taking off for a well earned week of skiing just after I saw them, and I had reports via Del Keily that they hit every ski spot in New Hampshire and Vermont. He is now back in Barrington all in one piece and again tearing into the Westfall-Chafee Laminates.

Three 1934 classmates (James P. Eder, William T. Leete, and myself) and their young post-World War II families got together over a March week end at the Eder family hideaway, in Stormville, N. Y. After the young folk had simmered

down in the evening the adults spent a pleasant few hours before a delightfully warm fireplace discussing at length the problems of educating young people. About the only conclusion we came to is that there are enough variables in any one family or child situation to test the capacity of the newest and best high-speed digital computer to find the right answer. Bill Leete, by the way, has become an ardent pilot and small aircraft owner and combines the use of the plane for both business and pleasure to get him around the countryside in rapid fashion. Bill is a firm exponent of flying, and he is convinced that the air age has come to stay.

Leonard Shapiro dropped in to see me in March. After six years with American Polymer Corporation and successor, the Borden Chemical Company, Leonard was transferred to the New York office about one year ago; there he has been assistant technical director of the Chemical Division. He has been a week-end commuter between New York and Marblehead, Mass., and at the time I talked with him he had decided to make a change which will be announced later. His son, Joel, now 17, is graduating this year from Marblehead High School and is interested in an engineering education. Daughter Marjorie, 14, is now in second year of high school and favors art as a major interest.

This is a plug for our 1934 Compton Scholarship Fund. The Institute just announced another tuition increase, effective September, 1958 (\$1,300 per year). Assistance via scholarships is perhaps the only way many outstanding children can in the future go to the better schools.

Now about the 25 year reunion in June, 1959. A good start has been made by forming a committee nucleus with some of the 1934 men now at the Institute (Walt McKay, Del Keily, Walt Wrigley, Joe Bicknell, and myself as co-ordinator). A few more 1934 stalwarts in the greater Boston area will be on the committee, and their names will be in the July issue. Many of the classes having their 25th reunion publish a class book, and usually this is done by a group other than the reunion committee. This is a job that does not have to be done in Cambridge, and now is the time to start the book. At the time of writing these notes, we need an imaginative classmate who has access to a secretary who is more imaginative than her boss to do the job. So step right up and volunteer for a job that will make Class and Institute history.

These notes prepared by Assistant Scribe Malcolm S. Stevens, M.I.T. Room 1-139. — Secretaries: WALTER MCKAY, Room 33-217, M.I.T. MALCOLM S. STEVENS, Room 1-139, M.I.T., Cambridge 39, Mass. JOHN A. HRONES, Vice-president for Academic Affairs, Case Institute of Technology, Cleveland 6, Ohio.

1936

It is always nice to get letters from the various class members, and doubly so when they comment on these class notes. At least we get to know someone reads them. Don't bother to type them — just scribble them on the closest piece of scrap

paper at hand. We are so happy to get same that we guarantee to unscramble them. Try us.

Received a nice letter from Jack Austin the other day. He had just returned from a trip to Mexico (partly business for you know what reasons). It was a coincidence that the timing was such as to make it possible to attend the annual M.I.T. Fiesta there. Jack reports that it is now quite a lavish affair. He attended for the first time two years ago, and they seem to get better each year. This year we were represented by two '36 men. Jack met Vince Estabrook there, and they had a wonderful time. They probably made a fine pair of Panchos all dolled up in their big Mexican sombreros.

The final dinner of the three-day get-together always takes place in the home and garden of one of the local Alumni, with a garden party of considerable proportions, not the least of which is the tasty Mexican food. Also, the colorful costumes worn by the local residents add to the occasion. Jack recommends it very highly to any of our classmates, should they have occasion to be in Mexico around the middle of March. Vince, being a bachelor, could possibly furnish us with some very interesting news on his escapades. How about it, Amigo? Vince, if you are still the ultraconservative soul, send us your latest dope on the market — we are desperate for news. Of course you know the type we prefer.

It seems as if the only way we ever get any news of Bob Gillette is through a third party. Jack had luncheon with Bob in Chicago recently. Bob was en route to Dallas for some sort of monumental stove meeting. Jack reports "no change in Bob . . . not even any gray hair." (Some of us consider ourselves lucky to have any, regardless of color.) Bob, as you know, is president of Rock of Ages Corp., Barre, Vt. [See the November '57 issue of the notes for a long write-up on Bob.]

Jack ends his letter by saying that he and Beaty are flying to Cuba for a vacation, Batista willing. They realize it may not be too healthy a vacation spot, but find it too late to change plans. These may be famous last words from our class president: "If you don't hear from me again soon, you can assume that I've been had, either by Batista or by Castro."

Jack Bleeg has a new address: Golf Club Road, Newtown Square, Pa. Likewise Carl Olson: 314 Charles Street, Reading, Mass. Captain Don Brown has joined the Pentagon group: OPNAC Op. 433, Room 4A522, Pentagon, Washington 25, D. C. Henry Furniss is now at 1269 Spring Street Northwest, Atlanta, Ga. Ben Fogler is no longer in Lexington, Mass. He is also sporting one of those simple addresses: USOM/ICA, A.P.O. 928, San Francisco, Calif. Carlyle Jacob is now at 398 Browncroft Boulevard, Rochester 9, N. Y.; and Jack Easton is at 16 Edgemont Avenue, Summit, N. J. Every time I receive a change of address slip I can't help thinking that it has resulted from something worth mentioning in the notes. How can we get these bashful fellows to write in?

An announcement made by the National Cranberry Association informs us that Ken Garside of Duxbury, member of

the board of directors for nine years and member of the staff since 1955 (as assistant to the president and then as acting general manager from May to October, 1957) has been promoted to director of operations. For several years, Ken was associated with Central Hudson Gas and Electric Company. As director of operations, he will be in direct supervision of production at Ocean Spray's six processing plants.

George Robinson was recently re-elected president of the Board of Education in the town of Clark, N. J. He has headed the board since June, 1955. For the past six years, he has been a chemical engineer for the Bakelite Company, Bound Brook Division of Union Carbide. He is also a member of the board of directors of the company credit union. George is an active participant in Clark civic affairs. He is past secretary of Woodland Civic Association, treasurer of Clark Township, Vice-president of the Clark Community Concerts Association, and treasurer of the Clark Scholarship Fund. He is entering his seventh year on the school board and has served on various committees, including acting as chairman of Legal and Finance Committee, board vice-president, and president for the past four years. The Robinsons have two children, David and Jill.

Frank Lessard has been named contracting manager for the Boston office of the Bethlehem Steel Co. Frank lives in Waban, Mass., and has been in the Boston office since 1944. He worked with L. M. Hersum Co., engineering firm, as a designer, until 1937, when he was employed by Bethlehem as a draftsman in the Boston sales office.

Dan Carroll, General Plant Supervisor, Central Area, Bell Telephone Company of Pennsylvania, has been appointed division plant superintendent, Suburban-Diamond Division, Eastern Area Plant. Dan joined the company in 1936 in the Western Area Plant Department.

Our Class was recently represented at the Industrial Health Conference of the American Industrial Hygiene Association, held at Atlantic City, by Mel First. He spoke on "Recent Developments in High Temperature Filtration." Mel is a consulting engineer and makes his home in Newton Center, Mass. Also, Orrington Dwyer served as chairman of the session of Thermal and Mechanical Design at the Fourth Nuclear Engineering and Science Conference, 1958 Nuclear Congress, held at the International Amphitheater, Chicago, Ill. — JIM LEARY, *Secretary*, One Putnam Park, Greenwich, Conn.

1937

Congratulations to our President, Phil Peters, for his nomination to the Executive Committee of the Alumni Council. Phil has been very active in the council and we all feel that they couldn't have picked a better or more qualified man.

Joe Heal reports that the gift fund drive is gradually gaining momentum but that we all have to get on the ball and really start giving. Each one of us must analyze what M.I.T. means to us individually and give accordingly, whether that be five dollars or five thousand dollars. The main

point, however, is to send your check now.

Bill Bergen is still "chopping wood at the same old stand" with a change in the company name to the Marten Co., Baltimore, Md. Bill is the executive vice-president; with his wife Gertrude and their two children, he lives at Merrymans Mill Road, Phoenix P. O., Md. Paul A. Vogel joined the Underwood Corp. as treasurer, June 1, 1957, and was promoted to controller on February 1, 1958. Congratulations, Paul. Phil Scarito is the works manager for Cary Chemicals, Inc. East Brunswick, N. J. Phil, his wife Frances, and their three children have moved to 2 Birch Avenue, Pennington, N. J. John Nugent reports that he is still single and still working at the M.I.T. Instrumentation Laboratory. John was a member of our reunion committee and is currently working with Joe Heal on our class gift program. Sidney Sussman is the chief chemist of the Water Service Laboratories, Inc., New York City. Sid just delivered a paper entitled "Experiences with Sodium Nitrate as a Cooling-Water Corrosion Inhibitor" at the American Chemical Society's meeting in March. His address is 175 Nassau Avenue, Manhasset, N. Y.

We continue our request for material for biographical sketches on the members of our Class. This issue those whose last name begins with P through Z are specifically urged to send the pertinent information about the different positions they have held; their family; books, pamphlets, or articles they have written; their Army career; clubs; travels.

Our present Class Secretary, Bob Thorson, was born January 28, 1916, in Philadelphia, Pa. He moved to Medford, Mass., at the age of 12 and attended the public schools in Medford. Bob entered M.I.T. in 1933 and while there was consistently on the Dean's list. He was active in sports, boxing, crew, and extracurricular activities. Bob received the degree of Bachelor of Science in Civil Engineering and upon graduation went to work for the Texas Company, in the terminal division. He traveled along the Atlantic Seaboard to different terminals in charge of construction. In 1939 Bob was transferred to Lockport, Ill., to the Refinery Division, where he worked on layout and design of tanks and cracking units. Upon the death of his father in 1940, he left the Texas Co. to manage the family roofing business in Medford, Mass.

On December 1, 1941, he went on active duty, for one year, in the U. S. Army Engineering Corps. District Engineer's office in Savannah, Ga. Joe Smedile was also in the same district and later Wally Wojtczak joined the district. The one year of active duty suddenly changed on December to a little over four years of duty. Bob was overseas in the European Theatre of Operations with the Seventh Army during 1944-1945. In December, 1945, he was discharged as a lieutenant colonel and resumed his activities with the Thor Roofing Company, Medford, Mass. He is active in the roofing association and last year received an award from the National Office for his services and achievements for the industry. His traveling is mainly to conventions in New York City, Atlantic City, or Chicago and a couple of vacation trips to Bermuda and Jamaica.

Bob is also active in the Chamber of Commerce and Rotary Club. Beyond this, he has been active in the community affairs in Lincoln, Mass., where he lives. Bob has been on the pack committee of the Cub Scouts and chairman, troop committee of the Boy Scouts. He belongs to the local players group and school association.

On June 10, 1939, he married Kathryn Ogg and they have two sons: Richard, 14, and Robert, 11. His hobbies are golf and fishing; and during the winter the whole family tries to get up to the ski country.

June is the month for reunions, and it brings to memory the enjoyable time all of us had at our 20th and the plans and anticipations for our 25th in June, 1962. Remember it will be at the Oyster Harbors Club on Cape Cod and all the family is invited. This is one occasion none of us will want to miss. Windy Johns, our reunion chairman, is full of ideas which will make our 25th an event to remember. — ROBERT H. THORSEN, *Secretary*, 506 Riverside Avenue, Medford, Mass. S. CURTIS POWELL, *Assistant Secretary*, Room 5-323 M.I.T., Cambridge, Mass. JEROME E. SALNY, *Assistant Secretary*, Egbert Hill, Morristown, N. J.

1938

First of all, we have a letter from Ed Faelton, who writes in part: "I submit the following for cogitation: eight years as assistant hull superintendent, Federal Shipbuilding and Drydock Co.; two years structural engineer, Donnelly Advertising Co.; three years designer, Bethlehem Steel Co.; one year chief draftsman, Central Steel Co.; two years squad leader, Lake Erie Engineering Corp.; last four years as consulting engineer in private practice, Buffalo, N. Y. Have acquired one wife, five kids, one head of grey (slightly) hair, one large waistline, and one small bank account."

Mrs. Gretchen Nelson, whom some might remember by the name of Van Stratum, recently spoke to the Boston Stein Club. Her topic was "Colors and Lights for Interiors." It's interesting to note that she is the president of her own organization. Another speaker in the news is Reeves Morrisson, who had as a subject "Economic Aspects of Nuclear Power." His talk was one of a series conducted at Trinity College. Reeves is a project engineer at Pratt and Whitney Aircraft Division, where he has been involved in studies on advanced power plants of piston, turbine, and nuclear types. He is also adjunct professor of mechanical engineering at the Hartford Graduate Center of Rensselaer Polytechnic Institute at East Windsor Hill.

In the military, we find that Edward Bodeau is retiring at Fort Meade as a lieutenant colonel after 25 years of service. He plans to become active in industrial consulting and engineering. We also find that President Eisenhower has sent to the Senate the nomination to make permanent the rank of major general held by William O. Senter. General Senter is director of procurement and production, Air Materiel Command, Wright-Patterson Air Force Base, Dayton. — DAVID B. ACKER, *General Secretary*, Arthur D. Little, Inc., 35 Acorn Park, Cambridge 40, Mass.

Manning Morrill took time out from his duties as vice-president of Cryovac Company to write: "We moved from Cedar Rapids, Iowa, last July and are now resettled in Winchester at 69 Wedgemere Avenue. My job is with Cryovac, which is a division of W. R. Grace. People are always wondering what the plastic bag business is doing mixed up with a steamship company." (Note: here Manning's explanation drifted off into something vague and I hope he'll write another letter to explain that there is really more to the plastic bag business than making comfort bags for steamship passengers) Manning went on to say: "I have seen Fred Grant and George Beasley at Alumni Council meetings and I see Brownie Parker at lunch at the Dewey and Almy Building, where we still headquarter. Wylie Kirkpatrick is with us working for our equipment division, which supplies the machines and accessories which are used in packaging the various food items in CRYOVAC (plug) bags."

I must say it is great to get letters and fun to pass along the news. Do wish, though, that more of you would take a moment or two for a short report. Just think, if you get fun reading news of other classmates, they'd get the same charge reading about your adventures.

Having mentioned George Beasley I'll follow through here by saying he was still running strong (for election to the school committee of Lynnfield, Mass.) as of February 25. George's biography appeared in the *Wakefield*, Mass., *Independent*, and it was a good biography as far as those things go in newspapers; however I believe that if Nick Carr and Byron Hunicke and a few others of us who have known George well were to have written this biography, we might have made an unusual column for the good citizens of Wakefield and Lynnfield.

Mark G. Magnuson has been appointed southeastern district sales manager for National Lead Company's Titanium Pigment Division and will headquarter in Atlanta. The newspaper story continued: "Mr. Magnuson began his company career in 1938 at the Saint Louis plant laboratory. In 1945 he was transferred to the Cleveland office as salesman and from 1955 to the present he has been in charge of the Atlanta office." It couldn't happen to a nicer guy. Good luck, Mark.

Ezekiel Losco participated in the fourth Nuclear Engineering and Science Conference during March when he coauthored a paper on "Metallurgical Design and Properties of Silver-Indium-Cadmium Alloys for PWR Control Rods." Mortimer Schultz was chairman of the Reactor Control Instrumentation Session.

From the Hingham, Mass., newspaper came this report: "Private funeral services for Gordon Crowell Seavey, 42, of 23 Bel Air Road, Crow Point, who died February 19 at the Peter Bent Brigham Hospital were held Friday, February 21 at 2:00 P.M. from the Deware Brothers Funeral Home, 179 Lincoln Street. Mr. Seavey was a consulting engineer for the Comstock and Wescott Company, Cambridge.

"A graduate of M.I.T., Mr. Seavey was a mechanical and electronic expert. He

had recently been engaged in the detection of solar radiation in the upper atmosphere and had been associated with Comstock and Wescott Company for two and one-half years. Prior to that he had been employed by Arthur D. Little Company. He had been a resident of Hingham for the past four years and was a charter member of the Crow Point Sailing Club."

Another news clipping reports George Burr '41 and Harold Hindman have opened a new plant for their Instron Corporation at 2500 Washington Street, Canton, Mass. They manufacture tensile testing equipment designed for use in the textile and plastic fields. Norman Taylor was chairman of the session on "Reliability Through Systems" at the 1958 Institute of Radio Engineers convention in New York during March. Harold Chestnut was a panel member at the session on "Educational Needs in Systems Engineering." Louis D. Smullin is associate professor of electrical engineering and was scheduled to speak on "Wave Propagation in Ion-Plasma Loaded Waveguides," at the symposium on Electronic Waveguides in New York during April.

And these notes are written during April for the June issue, which may be the last one before summer vacations start. I know Doc Wingard and all the fellows who will be working hard next year on our 20th reunion would suggest that we plan our vacations this year in directions which will allow us to combine our '59 vacation with our '59 reunion. Have fun this summer, and let's hear from you as you make those trips. — HAL SEYKOTA, *Assistant Secretary*, 416 Calle Mayor, Redondo Beach, Calif.

1940

I saw Divo Tonti at the National Airport in Washington recently after he was through testifying before a Congressional committee on highway problems. Divo is in charge of the New Jersey highways other than the New Jersey Turnpike.

To make a longer column requires a few letters to stretch it out. 'Nuff said. — ALVIN GUTTAG, *Secretary*, Cushman, Darby, and Cushman, American Security Building, Washington 5, D. C. SAMUEL A GOLDBLITH, *Assistant Secretary*, Department of Food Technology, M.I.T., Cambridge 39, Mass. MARSHALL D. MCCUEN, *Assistant Secretary*, 4414 Broadway, Indianapolis 5, Ind.

1941

Our apologies to Stan Webber, whom we reported as married last June, on the basis of a clipping from one of the local papers. Stan writes: "I recently received an issue of *The Review* in which the Class of '41 notes told of the recent marriage, for the first time, of one Stanley E. Webber to a young lady in Massachusetts. Unfortunately, my wife Emilie noticed this item and took a dim view of the whole matter, for she had married me in good faith in June, 1942, and does not approve of bigamy. Fortunately, I had not taken a trip east at the time of the alleged wedding. Seriously though, I did not believe that there was another '41 classmate with my name and presume it is all a mistake.

We have four children. I am working at the General Electric Microwave Laboratory in Palo Alto, Calif., trying hard to build various kinds of microwave tubes." We're glad to correct the error, Stan, and hope that you'll be restored to your prior domestic status without prejudice.

And we hear from Luis Jimenez: "... the same one that on our 10th reunion back in 1951, at Lenox, won the 'Long Distance Award' by mistake. The award was given to me for having come to the reunion from the longest distance, i.e., all the way from Caracas, Venezuela. And I say 'by mistake' because later I found a couple of fellows had come all the way from San Francisco; I calculated the great circle distances from Caracas to Boston and San Francisco to Boston, and found that the latter is the longer distance. I wanted to return the award on the occasion of our 15th reunion and kid some of the fellows for having missed the mark by a few miles. Unfortunately, I could not attend the reunion in 1956. In addition to the information for the Class Register, here is some more. My daughter Marjorie, who was born at Cambridge in May of 1938, was married last September at Fort Lauderdale, Fla. Her husband just graduated as a civil engineer from the University of Miami and is now attending postgraduate courses at M.I.T. From what we hear we are to become grandparents before the end of the year. The comments on this I leave to you, if you wish to make any kind of a story for the Review. However, I must inform you also of the following: I am not that old, just 42. Have a full crop of hair, no paunch (waist 28"), weight 130 pounds. This is just in case, on account of this becoming a grandfather affair. In fact, we have a two-and-one-half-year-old girl and a minus two months something (prefer another girl)." Can anyone top this? A father and a grandfather almost simultaneously!

Ralph Hunt writes: "The weather up here in Sacramento had better improve or we will all float away or start sprouting fins. It has rained nearly every day since the middle of January. Not a light drizzle continually all year round as in Seattle, but hard rain continuously. We have visited the hill country up around Reno, and exercised our prerogatives in the noble art of One-Upmanship by watching the people watch the skiers come tumbling down the mountainside at Echo Summit. Happy to report that Lake Tahoe is the cleanest lake I have ever seen; guess it should be because it is so high up and far away that there just isn't any way for it to get contaminated. We are stationed here at Mather Air Force Base for the express purpose of getting a new union card (flying fraternity), otherwise known as upgrade training as navigator, which I need like a hole in the head; but it is an administrative necessity."

And from Don Scarff, who writes of "... running into Roger Robertson at the airport a couple of days ago. He is now chief engineer of the B and H Instrument Company, Inc., 3479 West Vickery Boulevard, Fort Worth 7, Texas. As I was looking for baggage and Rog was looking for an airplane, I did not have too much opportunity to explore the operations of his company beyond finding out that they

are growing fast and have big plans for the future. In endeavoring to co-ordinate the new M.I.T. Alumni Fund solicitation for Contra Costa County I found, much to my surprise, that among my neighbors was Les Corsa, who now sports an M. D. and is affiliated with the Public Health Service for the State of California, and who lives in Lafayette. Here again, Les and I have not had a very long conversation as yet and, for all I know, he may be running the Service; but as soon as we can get together personally, I look forward to finding out more about his activities. I also found that Joe Knight⁴⁰ is living nearby in Concord, Calif., and is doing plant management work at the new Du Pont facility at Antioch, manufacturing mainly tetraethyl lead. Incidentally, both of the above gentlemen readily agreed to assist with the Alumni Fund solicitation, proving that the Class of '41 spirit still burns strongly. As for me, I am endeavoring to work into a new regional operation at our Large Lamp Department of General Electric recently set up here in the West. [Don is manager of the Western Sales Region - I.W.C.] I am concerned with the 11 western states and the two territories and I have five sales districts to keep track of in this region, so you can imagine the travel schedule, which also includes a monthly visit to our Nela Park headquarters in Cleveland. I know more about airplanes than the lamp business right now. The Scarff family is well and enthusiastic about the West. Doug is now 14 and Ann 10. Both children like the California sunshine and all the rest of that chamber of commerce stuff. I can talk this way, having been here slightly less than three years. In about another year or two, I'll begin to take it seriously." I'm a little mixed up about California weather at this point, but am delighted to hear from all you fellows. Thanks a lot for writing; will some others add some stories of their own?

Kenneth Spengler, Executive Secretary of the American Meteorological Society, recently spoke to the Arlington, Mass., Kiwanis Club on how business organizations utilize meteorologists to aid in operations. And at the 164th National Meeting of the Society at Kansas City, Mo., Bob Bailey spoke on "Heavy Snowstorms Associated with Major North American Cyclones." According to the abstract, examination of forecasting parameters for about 150 snowstorms associated with North American winter cyclones reveals that a combination of well-known forecasting techniques will successfully delineate heavy drifting snowstorms from "average" snowstorms of less than 10 inches. I hope Bob predicted some of the old humping-ers we had last spring!

Participating in the Fourth Nuclear Engineering and Science Conference in Chicago was Jim Terrill, who was vice-chairman of the sessions on Reactor Shielding and Containment, and on Waste Treatment and Disposal. Bob Fano was chairman of the session on Statistical Applications at the 1958 Institute of Radio Engineers Convention in New York. And, in a story about John Hermistone's grandmother, who was 100 years old on March 13, we find that John is with the Farrington Company of Needham Heights, Mass.;

is married to the former Lora Von Bergen of Quincy; and has two children.

The "17th reunion" (Boston branch) was held at the Faculty Club in Cambridge on Friday, March 21. Beginning with a cocktail hour, we later sat down to a fine dinner (choice of lobster or roast beef), and heard from Walt Kreske about the status of legislation covering engineering registration in Massachusetts. (Walt has been very active in the legislative affairs work of the National Society of Professional Engineers.) We also enjoyed the film *A Bell for M.I.T.*, which told the story of the casting of the bell for the new chapel in the Tech foundry. All agreed the evening was a very enjoyable one, and we plan to continue the tradition started in 1957. If you're in the area, by all means join us; if not, have a similar affair of your own. Present were: Bud Ackerson, Alice and Ed Beaupre, Shirley and Ivor Collins, Dave Howard, Barbara and Frank Johnson, Semah and Herb Klein, Walt Kreske, Marjorie and Mitch Marcus, Natalie and Ed Marden, Howie Morrison, Carolyn and Ray O'Connell, Mary Louise Read and Charlie Sauer, John Sexton, and Leona (Norman) and Bud Zarsky. — IVOR W. COLLINS, *Secretary*, 28 Sherman Road, Wakefield, Mass. HENRY AVERY, *Assistant Secretary*, Pittsburgh Coke and Chemical Company, Grant Building, Pittsburgh 19, Pa.

1943

These notes should reach you a few days before the 15th reunion gets under way at the Royal Club Hotel, Megansett Beach on Cape Cod. If you are driving from New York, your best bet is to go to Providence, then Route 44 through Taunton, then Route 28 through Buzzards Bay and south to Megansett. There is train service from New York and Boston to North Falmouth and airline service to Hyannis from Boston; Hyannis is 20 miles from Megansett. Ken Warden and Fred Perry have lined up all the sports activities, which will include golf, swimming, sailing, soft ball, walking and running, and just plain relaxing. Bob Anderson has amassed a grand assortment of gifts and prizes and tells me that no one will go home empty-handed. Kemp Maples has accepted reservations for all and guarantees fine accommodations. Mort Spears has arranged some fine entertainment, and Bert Picot is all set for our photographs. I am glad all these fellows have worked so hard to get everything ready, and I hope that the welts on their backs from Chairman Ralph Leader's whippings will be gone by the time of the reunion.

I am happy to report that Jim Hoey's dues letter brought in some welcome cash for the class treasury. There is still an opportunity to send in your dues if you have not already done so, and they can be mailed to me any time. I might mention that the class treasury is not used to finance the reunion but remains as a separate fund. The reunion budget was carefully worked out and the whole affair is run on a break-even basis.

Classmates who gave papers at the Institute of Radio Engineers Convention in March include Wilbur Davenport, Jr., and John Ward: the former on "Some Com-

munications Applications of Detection Theory" and the latter on "A Servopressure Control System for the Iron Lung." E. Alfred Burrill, Jr., presented a paper on "The Role of Particle Accelerators in Reactor Research and Development" at the fourth Nuclear Engineering and Science Conference in Chicago. A library corner in the new parish house of St. Mark's Church in New Britain, Conn., has been established by the church in memory of our beloved classmate, William G. Saunders. Those who wish to make gifts toward this memorial book collection may send them to St. Mark's Church for the Saunders Fund.

Those of you who will be unable to attend the reunion will find a full and complete report of what happened in the November issue of *The Review*. It's been a lot of fun working on the affair and I look forward to seeing many of you there. — RICHARD M. FEINGOLD, *Secretary*, 49 Pearl Street, Hartford 3, Conn.

1944

Roger Freeman, Vice-president at Manufacturers Mutual Fire Insurance Company, was recently elected president of the board of trustees at Moses Brown School, where he was graduated in 1938. The eldest of Roger's children has entered Moses Brown this year.

Tom Dolan is now a married man of one year's standing, having taken the vows with Judith Donlan. They are currently living in Middleton, Mass.

Paul Ely comes to light after a long absence; he is living in Chicago, Ill., with a wife, son, and daughter. For the past 10 years Paul has been engaged in research and commodity counseling activities, having been research manager and account executive for Longstreet-Abbott and Company of St. Louis. His latest change takes Paul to the Bell and Howell Company, where he has been named manager of Market Research.

Another promotion brings Fred Cavanaugh to the fore as assistant to the president of Wyeth International, Ltd. Fred acquired a master's in business administration at Harvard, and prior to this job was with E. B. Squibb in Argentina, Europe, and as general manager of their Colombian office. Currently Fred is living in Haverford, Pa., with his wife and son.

Dick Whiffen has been named plant manager of the Mishawaka plant by Bendix Aviation. Dick joined the radio division of Bendix after service in the Navy. He worked as assistant chief engineer on design and development of airborne communications equipment, microwave components, and radar systems. In 1953 he was transferred to the Products Division staff and shortly thereafter promoted to quality manager, which position he held until the present step-up.

A short memo places Dick Hatfield in Venice on a shipbuilding project for Booz, Allen, Hamilton as a management consultant. Dick married Natalie Hallock, and on his latest assignment they went abroad with their three children on the *Vulcania*. Prior to this, Dick was a naval officer at the Bremerton Navy Yard, after which he went to the Maryland Ship Building Company and thence to Electric Boat. Dick

expects to return to the United States in 1959. A Neutron Physics Section has been established in the Atomic and Radiation Physics Division of National Bureau of Standards with Randall Caswell in charge. Randall has been with the Bureau since 1952, having acquired his Ph.D. in 1951 at Tech.

Al Thompson now has an M.A. in mechanical engineering from Northeastern. Al is still at Norfolk Iron and lives in North Abington, Mass., with his wife, Corliss Ann, and their son and daughter. Jack Germer reports from San Jose, Calif., with the Atomic Powered Equipment Department of General Electric. He was recently transferred from the Knolls Atomic Power Laboratory in Schenectady where he was doing reactor design. A second daughter, Janet, was born shortly after arriving on the West Coast. —BURTON BROMFIELD, *Secretary*, 72 Woodchester Drive, Weston 93, Mass.

1945

Easter has come and gone; spring is not far behind we hope! By the time you receive these notes I trust your golf game is down in the low 70's; your garden is green; and, oh yes, the kids will be home for summer vacation in a couple of weeks.

Last fall your Secretary had high hopes of making this page bimonthly, but my winter do-it-yourself project of enclosing and pine paneling an old screened porch has been more than I bargained for. You are right, it is not done yet; I have been saying a couple more weeks for the past month, but now I think it is correct.

From all reports Tom Stephenson did an excellent job as deputy chairman of the Pittsburgh Regional Conference held early last December. As you all probably know, it is usually the deputy that must do all the work. As president of the Pittsburgh Club, Tom necessarily organized all the committees and made certain that all went smoothly. I am told that Steve did manage to draw his monthly contribution from the Aluminum Company while he was devoting much of his time to this successful affair. Ed Stoltz, still with Johns-Manville but now in Pittsburgh in charge of transit pipe sales, served on the registration committee; while Julian (Jumper) Gammon acted as an official greeter. I don't know whether Al Oxenham officiated or not; I do know, however, that Jerry Hahn'47 did a first class job on the printing and publicity. Ed Stoltz assumed the duties of treasurer of the Pittsburgh Club in early February, and I know you all join me in wishing Ed every financial success in this new position.

In his February letter Ed Stoltz not only supplied the above information but also mentioned an hour-long phone conversation he had with Mr. Castings himself — Bill Shuman. Last week I received an article entitled "Investment Castings Go Civilian" which appeared in the March 3 issue of *Steel*. Our boy Bill, sales manager of Hitchiner Manufacturing Co., Inc., in Milford, N. H., was quoted in detail. Yes, it was an excellent sales pitch on Bill's part. When do you expect to be in New York again, Willie? I well remember the success you used to have in the Brandywine Room of the Hotel LaSalle in South

Bend; yes, with our old Walla Walla buddy, Kirk Drumheller, beaming from ear to ear as he sought support from the wooden counter!

During our local Stamford Fund solicitation one of his fellow employees reported that Bill Loeb, as chief project engineer, was going great guns with Nuclear Development Associates up at the Westchester Airport, New York. Alan Gruber'46 recently left nuclear for a West Coast position. Jack Atwood of 830 Linda Lane, Charlotte, N. C., reported the birth of his third child, James Aldridge, last October. Since I spent several paragraphs the last two times I wrote telling about George Hetrick, probably I should only paraphrase a letter received from Armstrong Cork Co. wherein it was indicated G. B. had just been appointed Saint Louis manager of Armstrong Contracting and Supply Corporation, a new subsidiary. Cyril M. Harris, Associate Professor of electrical engineering at Columbia, recently published *Handbook of Noise Control*. The French and Japanese translations of Professor Harris' *Acoustical Designing in Architecture* were published in 1957.

Bill Mackenzie took a most active part in the winter meeting of the American Institute of Electrical Engineers held in New York in early February. Bill gave two papers: one was entitled "An Experience with Breaker Restricting and Arrestor Destruction on the Pennsylvania Power and Light Co."; and the other, "Measurement of Voltage Resulting from Single-Phase Switching of a High Voltage Three-Phase Transformer." A mid-February issue of the *Boston Herald* had a feature story about Harvey Brooks's recent appointment to the weapons subcommittee of the Congressional Atomic Energy Committee. Brooks, presently Gordon McKay Professor of Applied Physics at Harvard, took several graduate courses with us while he was doing research at the Howard Underwater Sound Laboratory during World War II. John Riley presented a paper entitled "Synoptic Features of Potato Late Blight in the North Central States" at the March meeting of the American Meteorological Society held in Kansas City. Bill Linvill of the Department of Defense in Washington was one of seven members of a panel which discussed the role of systems engineers in the industrial and military fields and its impact on engineering education at the Institute of Radio Engineers Convention held in New York the last of March.

The December issue of *Iota Muse*, a Phi Gam periodical, had several tidbits on fellow classmates. Hobart Swan'44 and his wife Nancy (King) have four children: Anne 9, Vicki 8, Karen 7, and Robie 5. Hobie is a purchasing agent for Scott Paper Company. Edwin A. Reed reported from Houston, where he sees Don Walsh and Ed Hill'46 at regular M.I.T. Club meetings. Jerry Patterson said hello from Binghamton, N. Y., while Vince Butler — former bachelor — reported on his diving abilities previously noted by us! Matt Long'44, who resides in Winston-Salem, N. C., with his wife Emmie and children Randy and Anne, is president of Long Engineering Co., an electronics outfit, and Greenville Spinners, Inc., a holding company.

As you probably know, the Institute eventually learns of your change of address and ultimately these changes make their way here to Stamford so we can have an up-to-date(?) class record. I try to piece together a story from these notices if it is at all possible. Hal Thorkilsen is now located at 449 Lee Road, Northbrook, Ill.; no more commuting from Colgate Palmolive's Chicago Sales Office to Fanwood, N. J., as was the case for several months. Bill Martin's change from Natick, Mass., to West Hartford, Conn., gives me no chance of a story, while Ray Elmdorf's move to Kingston, N. Y., falls in much the same category. Duncan Luce has moved from Morningside Heights and Columbia University to Cambridge and, I suspect, research or teaching at the Institute.

On occasion we must report the death of a fellow classmate. Robert L. Hibbard, VI, died in Ridgway, Pa., sometime in January. As many of you will recall, Bob was a member of Theta Delta Chi; as a few will remember, he was a member of good standing of the Saturday Morning Bear and Bridge Club which met regularly at the Theta Delta house during our V-12 days. After Tech Bob worked for Du Pont for several years before accepting a position in an outfit outside New Haven. I'm sorry to say that I lost track of him while he was in the New Haven area.

Ed Stoltz reminded me in his February letter of a subject discussed at length some time ago in these notes. A subject which should be dear to our hearts during these trying financial years of all private educational institutions — money! — and our 25 year gift. At our 10th reunion there was quite a discussion of this item; but it broke up without any particular conclusions as we rushed out to our wives, the bar, or both. However, many of us thought it would be advisable to put aside in a Class Fund five or ten dollars a year which could grow into a sizable start towards our 25 Year Gift in 1970. We want to get the show on the road this summer or early fall. Any comments, either pro or con, would be helpful.

Should the room be finished, golf game improved, and news available, we shall see you next month; if not, have a most pleasant summer you guys and gals and we will see you in November. —C. H. SPRINGER, *Secretary*, Firemen's Mutual Insurance Company, 420 Lexington Avenue, New York, N. Y.

1946

Several of our classmates have been active on the conference circuit recently. Daniel I. Cooper was chairman of the session on Temperature Measurements and High Temperature Instrumentation at the fourth Nuclear Engineering and Science Conference held in Chicago last March. Kurt Goldmann, with others, gave a paper on "The Sodium-Cooled, Deuterium-Moderated Reactor." Kurt works for the Nuclear Development Corporation of America. Frank M. Verzuh was chairman of the session on Computers and Control at the 1958 Institute of Radio Engineers Convention in New York in March. Mac E. Van Valkenburg of the Department of Electrical Engineering, University of Illinois, gave a paper on "Analysis of Non-

reciprocal Networks by Digital Computer" at that convention. Also, William M. Siebert of the M.I.T. Electrical Engineering Department gave a paper entitled "Some Applications of Detection Theory to Radar."

John C. Johnson of 20 Edgewood Road, Shrewsbury, Mass., has recently been promoted from assistant to associate professor in the Physics Department of Worcester Polytechnic Institute, Worcester, Mass. John was a member of the M.I.T. Meteorology Department for seven years, receiving his master of science in 1946 and his doctorate in 1948. He was a research associate and lecturer in physics at Tufts in 1953 and 54, and then joined the staff at Worcester. His book, *Physical Meteorology*, was published in 1954. Robert L. Potter writes to say he is a unit supervisor in the Physical Chemistry of Combustion Research Department of Bell Aircraft Corp. in Buffalo, N. Y. After receiving his Ph.D. from M.I.T. in 1948, he taught chemistry at the University of Pittsburgh until 1951, at which time he went to Bell. He is married, has three daughters, and lives at 32 Miller Road, R. D. #1, Niagara Falls, N. Y. Weems E. Estelle, who lives on Black Rock Turnpike, Redding Ridge, Conn., is manager of engineering, in charge of product design, development, and preparation for production for Thomas A. Edison Industries, McGraw Edison Co. Morton Goldfarb is an urologist and has his offices at 200 North Village Avenue, Rockville Centre, N. Y. His home is at 105 Grover Avenue West, Massapequa Park, N. Y. After teaching at the Shady Hill School, Cambridge, Waller MacNiven Conard joined the staff of the Putney School, Putney, Vt., where he is a teacher of geography, mathematics, and shop, as well as director of camping activities. He bought a 24½ foot auxiliary sloop two years ago, and he and his wife live on it and cruise during the summer months. Ah for the academic life!

Robert J. O'Donnell is a research engineer in petroleum refining for the California Research Corporation of El Segundo, Calif. The O'Donnells and two children live at 2190 Danberry Lane, San Rafael, Calif. After receiving his M.S. from Drexel in 1954, Morris A. Chomitz joined the Kuljian Corp., where he is chief chemical engineer. The firm is made up of architect-engineers and constructors and Morris handles the chemical process and related projects. Morris is married, has two children, and lives at 7213 Mansfield Avenue, Philadelphia 38, Pa. Rouholah Zargarpur is a project engineer at Stewart-Warner Corp., working on automotive instruments. He lives at 420 Thatcher, River Forest, Ill. In June, 1954, William E. Vannah left the Research Department of the Foxboro Co. to become associate editor of *Control Engineering*, a McGraw-Hill publication. He became editor in 1955 and is now chief editor, responsible for the editorial scope of the magazine, editorial personnel (10 full-time technical editors and production people), and publicity. Bill is married, has four children, and lives at 109 Courtland Hill Street, Stamford, Conn. The questionnaire I received from H. Fred Goelzer indicated that he was research program administrator for the Convair San Diego Division

of Applied Research. Since receiving that news we have learned that he has changed his address from San Diego to 1440 North Mountain Avenue, Claremont, Calif., so it appears that he has changed jobs. Fred earned his S.M. at M.I.T. in 1948, is married, and has four children.

Robert S. Loomis has his own professional engineering business with offices at 252 Broad Street, Windsor, Conn. He opened his business office in 1955 and specializes in plans and specifications for building structures. He has designed the Vierendeel Trusses which span the Connecticut highway and also the ones which carry the Hartford Public Library. Bob is a director of the Windsor Federal Savings and Loan. He is married, has three children, and lives at Mountain Road, East Granby, Conn. In 1948 James S. Craig earned his M.B.A. degree from Harvard University Graduate School of Business Administration and went to work at the Raytheon Manufacturing Corp. as a project engineer in the Radar and Communications Division. In 1953 he joined the hotel chain that is now Hotel Corporation of America as director of purchasing. Last year, as was duly announced in these notes, he was elected vice-president in charge of purchasing. Jim is married, has three children, and lives in a community full of classmates (Heuchling, Siebert, Parish, to name a few) at 4 The Valley Road, Concord, Mass. Henry E. Craddock is assistant superintendent of Manufacturing Engineering at the Western Electric Co. in Kearny, N. J. He is also a director of the Newark, N. J., Junior Chamber of Commerce. The Cradducks have three children and live at 48 Jacobus Avenue, Great Notch, N. J.

Angus N. MacDonald is a partner in Braxton and Company, a financial negotiation firm with offices in New York City. Angus is married, has three girls, and lives at Devon Road, Greens Farms, Westport, Conn. Stuart Edgerly, Jr., is industrial sales manager for Fenwal, Inc., of Ashland, Mass. Stu manages the non-aircraft sales program and says that business is booming, having tripled in three years. The Edgerlys also have three children (apparently a very popular number) and live at 38 College Road, Wellesley 81, Mass. Stu says he greatly enjoys his job as a member of the M.I.T. Athletic Board, which gives him a chance to see some of the projects M.I.T. is successfully handling in the program of broadening the students' educational experience and living environment. In that regard, those who have not visited M.I.T. for some years should not miss it if they are in Boston. The additions to the plant are little short of amazing. Alexander Kanonovich joined the General American Tank Storage Terminals Division of General American Transportation Corp. in 1947 as assistant plant engineer at their Carteret, N. J., plant, and is now chief terminals engineer in charge of design, specification, and purchasing of all new construction. Al travels a good deal in connection with his job, regularly visiting Chicago, Houston, Corpus Christi, and New Orleans. Al is married, has one child, and lives at 128 Longfellow Street, Carteret, N. J. — JOHN A. MAYNARD, *Secretary*, 15 Cabot Street, Winchester, Mass.

At long last your Secretary has returned from a three-month trip in Europe and has settled down as sales manager of Sigourney Manufacturing Corporation in South Acton, Mass., a newly organized company which will make investment castings. Many thanks are due to Stan Buchin and Jim Margolis for handling the class notes during the past few months. (In case you wondered, the March Review had a pile-up of three 1952 columns.)

Of special interest to the Boston area group are the plans for a cocktail party on Friday, June 13, at the Faculty Club starting at 5:30. Dinner will be available through club members, and it's a good way to start off Alumni Day festivities. Contact Bob Briber, Stan Sydney, Stan Buchin, or Yours Truly for details.

Jim Margolis sent up a nearly full column of news for this issue, so we'll run it as is.

From Westinghouse comes word that Niel Curlee, Course XV, is a mathematician in Atomic Works. Jim Weissburg is a nuclear reactor design engineer working on one of the newest atomic submarines. Jim and three others received an award for their contributions in this field. Sherman K. Grinnell, recently discharged from the Air Force after working two years on research and development of guided missiles, is with Case Institute of Technology, Cleveland. Sherm has won an appointment as assistant to the vice-president for academic affairs. In Indianapolis, Ali Wasil recently spoke on "Pakistan and India Today." Ali is technical advisor to Hollywood studios on Eastern civilization and culture. He has lectured throughout the U. S. and made several appearances on nationwide television and radio programs.

Received a note from Bob Robertson '53, 80 Sanborn Avenue, West Roxbury 32, Mass. Bob sends his regards to all his friends and sent his regrets that he cannot make the monthly class luncheons of the M.I.T. Club of New York because of the distance. Thanks for the note, Bob. For classmates in the New York area, we are getting together for lunch on Tuesday of the first full week of each and every month. You will enjoy it, so come on over to the Biltmore and give it a try.

John R. Myer of Hugh Stubbins and Associates architectural firm participated in the winning of an Award Citation by his firm for the designs of the proposed business administration and student administration buildings at Brandeis University, Waltham. The awards, sponsored by *Progressive Architecture*, national architectural magazine, were presented in Philadelphia to 25 firms out of more than 600 entries. Robert McKay Green of Haddonfield, N. J., and Bedford, Mass., is another classmate to show that our Class has no dearth of talent. Bob has been awarded one of the first Gleason Works Foundation, Inc., fellowships for two years study at Harvard Business School. The fellowships are sponsored by the Gleason Works of Rochester, N. Y. After graduation, Green received his S.M. from Tech and spent two years in the Army followed by one year at American Brake Shoe Co. as a metallurgist.

Personals. Bill Warner has settled in Providence, R. I., as a registered architect. Bill is project director for the College Hill Urban Renewal Demonstration Study. John McDonald, 2d, writes from Phoenix, Ariz., that he is now working for AiResearch Manufacturing Co. of Arizona after having received his master's in mechanical engineering from M.I.T. The McDonalds are the proud parents of an 11-month-old engineer, Bruce. Word comes that Sidney Byrum is general superintendent and secretary of the Byrum Construction Company, Wheeling, W. Va. Sidney and his wife have a boy, Scott, four years old. Barnett Berliner of Brookline is a candidate for representative in the Town Meeting from precinct 9. Barney is affiliated with Bender and Associates, planning consultants for Revere and Winthrop, and has designed motels, camps, houses, shopping centers. Barney believes that "citizen participation is essential for good government." But remember, you don't have to be in politics or architecture to get your views and activities in this column. If you were graduated in '52, you're entitled to a few inches, so drop a line. Another newsmaker is H. Richard Johnson, vice-president of the recently formed Watkins-Johnson Company to deal in research and development and manufacture of specialty electronic devices. Johnson gave up his position as head of the Microwave Tube Department of Hughes Research Laboratories, Culver City, Calif. Also in that area of the country, word has it that Marty Levin in Millbrae, Calif., is working for Eimac Corporation as a project engineer. In spare time Marty has been building his own furniture, coffee table, upholstered footstool, desk, bookcase, dining room table and chairs.

Quite a number of our expressive colleagues have been giving talks and papers. Duane Haugen and a coauthor gave a paper on "An Evaluation of Sutton's Hypothesis for Diffusion from a Continuous Point." A series of 70 diffusion experiments were conducted over flat terrain and uniform growth. From the data collected, an analysis was conducted of Sutton's hypothesis for diffusion from a continuous point source. The talk was given at the 163d National Meeting of the American Meteorological Society, New York. Also in New York at the Audio Engineering Society meeting, Jack B. C. Purcell participated in the presentation of "Recent Experiences in Studio Design." In particular the effect of design on acoustics in broadcast, recording, and television studios was presented. At the Institute two technical dinner speakers for the Institute of Radio Engineers recently were: Professor John McCarthy, who spoke on electronic computers and automatic programming; and Dr. John Ruze, who spoke on antennas and propagation and the synthesis problems in antenna design. Conrad Hemond, who did graduate study in '52 and is now chairman of the Department of Engineering Science at Hillyer College of the University of Hartford, presented an article, "Engineers Face the Future." One item in particular stood out in the abstract, as quoted: "No sacrifice should be made, however, which will create science 'monsters'—overly brilliant young people with narrow and limited social concepts. Pres-

ent and future needs appear to dictate the training of individuals who can advance in science, while at the same time recognizing their obligations and their duties as responsible citizens in a complex and independent society."

To wind up, a few more articles from our prolific Class recently were: Dave Kosowsky speaking on "Present Design Approaches" on crystal filters at the Western Electric Convention sponsored by the Institute of Radio Engineers and West Coast Electronic Manufacturers Association; Bob Archer's article in *Quarterly of Applied Mathematics* on "Stability Limits for a Clamped Spherical Shell Segment Under Uniform Pressure"; George Clark's article in the *Review of Scientific Instruments* on "Fast Timing Apparatus for Measuring the Arrival Directions of Cosmic-Ray Air Showers"; Tom Furnas' article in the *Review of Scientific Instruments* on "Point-Focusing Two-Crystal X-Ray Monochromator of X-Ray Diffraction." Dick Coderre, working for Shell as a technologist in chemical marketing, had an article in *Chemical Engineering* entitled "Build or Repair with Epoxy-Glass Laminates." Dick is also credited with a number of other articles, including the section on epoxy resins in the *Encyclopedia of Chemical Technology*. — JIM MARGOLIS, Assistant Secretary, 218 Richbell Road, Mamaroneck, N. Y. DANA M. FERGUSON, Secretary, 366 Main Street, Lynnfield Center, Mass.

1953

We have just a few notes this month; but I'm sure that next month, with notes on the reunion, will more than make up for it. Oliver H. Gilbert, Jr., and Ann Bostock were married in the M.I.T. chapel on January 25. Ann is a graduate of Wellesley College.

Louis Eyster has announced the opening of his own architectural offices in North Scituate. Prior to opening his office Louis was associated with the Boston firm of Shepley, Bulfinch, Richardson, and Abbott.

John Schrieffer was one of three authors of an article "Theory of Superconductivity" published in the December issue of *Physical Review*. And our last note, Philip Thompson presented a paper entitled "Statistical Aspects of the Dynamics of Baroclinic Models" at the 163d Meeting of the American Meteorological Society. — VINSON W. BRONSON, Jr., Secretary, 58 Greendale Road, Mattapan 26, Mass.

1954

This is the time of the year which always abounds with weddings and rumors of weddings. Members of the Class who have been major participants in recent affairs of this nature include Paul Koppel, who married Eva Irene Grunebaum of Scarsdale, N. Y., last December 21. The Koppels are now residing in Bridgeport, Conn. Pete Cunavellis and Frances Simeon said the mystic words in New York City on February 2 and have since settled down in Cambridge, Mass., where Pete is hard at work on his master's degree at M.I.T. Emile Houle married Margaret Gordon in Philadelphia on

March 1. Bob Stewart and Nancy Jenkins were wed in Beeville, Texas, on February 15 and are now hiding out in New Britain, Conn. And another member of the Upper East Hayden Physics Society has succumbed to the various relevant pressures: Larry Leonard has temporarily abandoned his pursuit of a Ph.D. at Tech to marry Marjorie Aronoff at Brookline, Mass., on the 15th of this month.

On other horizons, John Dixon '55 has entered a twist and sent me a picture of a Mexican donkey accompanied by a lengthy diatribe on my interpretation of his previous communication. It seems that I reported that he had had a "vigorous" tour of duty with the Army, whereas he had written that it had been "rigorous." He goes on to say: "Whether it was vigor or rigor that did it, I was so 'tried' that I've spent the last couple of months languishing—or should I say 'anguishing'—at home with a slipped disc. Worse than this, however, was your misplacement (or displacement, if you will) of Steve Lirot and family to Delaware. They live in the town of Delaware, state of Ohio." Well, now, I humbly apologize, John and Steve. Without intending to place in doubt the legibility of the penmanship of any member of the Class, I can only say that I always endeavor to call them as I see them. After writing the above, John's pen apparently ran out of ink; and while he was refilling it, John calmed down enough to recall the fact that Ray Freeman and Jim Hyde are living in Newton, Mass. (Sure hope I got that right.)

Ron McKay writes that he and his wife Sally are still living in Brookline, Mass., while Ron commutes to Tech and Harvard and gropes toward a master's degree in architecture. He also notes that Warren and Jeanne Davis are still living in Arlington, Va., and that Bob Reichard is working somewhere in the Boston area while taking one course a semester at M.I.T. Dick Hayes reports from Wright-Patterson Air Force Base that he is considering staying in the Air Force. What some people will do to avoid work! Chuck Masison informs us that he and his family have settled down in Palmer Park, Md. Chuck is involved in digital computer data processing, which he describes as fascinating work. He received his master's degree in Engineering Management from George Washington University in February.

From various other sources, we have various other items. Bruce Blanchard and his wife Sydney are living in the Boston area. Bruce is a teaching assistant in the M.I.T. Department of Civil Engineering. Pete Bishop and his wife Gloria have bought themselves a home in Harrington Park, N. J. Pete is working for the General Radio Company of New York City. Tom Henderson has forsaken the Navy and camped in the Chicago area, where he is working for J. L. Simmons Company, building contractors. Jay Fues left the Air Force in February and is now gainfully employed by the Texas Instruments Company, Inc., in Dallas. John Gusmer is living in Waupaca, Wis., apparently enjoying life with his wife and his young son Theodore. Al Milian received his Ph.D. from the University of California last year and is now a member of the staff of Du Pont's Polychemicals Depart-

ment, Research Division, in Wilmington, Del. Alex Pausley has received one of the first Gleason Works Foundation, Inc., Fellowships for two years of study at the Harvard Business School. Russ Barnes and four of his coworkers at the Battelle Memorial Institute delivered a paper at the Nuclear Engineering and Science Conference in Chicago in March. The paper was entitled "Comparison of Experimentally Determined Fission Rates with Calculated Values in Small Diameter Fuel Pins." Larry Holmes acquired his Ph.D. at Harvard in March. And Jack Preschlack was elected a Baker Scholar at the Harvard Graduate School of Business Administration.

I hope to see a good many of you in Cambridge on Alumni Day, June 16. And I hope that those of you who cannot get to the festivities will drop me a note about your current activities. — EDWIN C. EIGEL, JR., *Secretary*, 3654 Flora Place, St. Louis 10, Mo.

1955

Hil Just a few news items this month, these supplied for the most part by the post cards from The Technology Review which one receives upon changing his address with the Alumni Association.

These cards are a great help — as is your notification of address changes; so do try to return them. Such an easy way to make the *back* page of The Review! Several proud parents have written recently. Alan and Eleanor Schogel, who are now living in Bayside, Long Island, have a new daughter, Jane Bernice, who arrived in December. And Phil and Martha Brooks welcomed a son, Stephen Lee, in February. The Brooks are living in Watertown, and Phil has been working at the M.I.T. Instrumentation Laboratory since last June. From Upper Montclair, N. J., Don Welsh writes of the advent of a baby girl, Anne Elizabeth, in February. The Welshes also have a new house in Upper Montclair, following Don's transfer from Sylvania in Woburn to the New York office. He is busy merchandising all sorts of tubes for Sylvania.

Groom-of-the-month is Avery Johnson, who was married in February to Johanna Driscoll of Bradford, Mass., an alumna of Chandler School for Women and a psychiatric occupational therapist at Boston State Hospital. The Johnsons are remaining in the Boston area while Avery works toward his doctorate in the Neurophysiology Laboratory at M.I.T. Paul Lualdi has left his position as a nuclear project engineer with General Dynamics in Groton, Conn., for an appointment with Uncle Sam. At last report he had just graduated from the Quartermaster School at Fort Lee, Va. Bob Buntschuh and family are now at Harlingen Air Force Base, Texas; and the Roy Salzmanns are living in Savannah, Ga., where Roy is a combat-ready B-47 copilot at Hunter Air Force Base. Roy expects to be released from the Air Force in about a year and to return to Sperry Rand's Univac Division in Philadelphia.

Norm Poulin, Pete Seagle, Frank Wood, Bill Neff, and Ralph Shoffner have all returned to civilian life recently. Norm is living in Union City, N. J., and working

for Belding Heminway Corticelli in New York City in operations research. Pete Seagle is back at his old job with the Contracting Division of Dravo Corporation after a couple of years with the Army in Germany, working as formerly out of Pittsburgh. Frank Wood is down in Paducah, Ky., as a chemical engineer with the Dyestuff and Chemical Division of General Aniline and Film Corporation. And Bill Neff is with the Civil Aeronautics Administration in Washington, D. C., as a flight test engineer. Ralph Shoffner and his wife are living in Kittanning, Pa.; Ralph is a production assistant with United States Gypsum in Pittsburgh after 19 months with the Navy. He is working on his master's degree at the University of Pittsburgh, attending evening classes.

Marty Shooman is on leave of absence from Sperry Gyroscope, but not for the military! He joined the staff of the Electrical Engineering Department at Polytechnic Institute of Brooklyn this spring as an instructor and is teaching and working for his doctorate. He is now living in New Hyde Park, N. Y. Guess that's it for now! — MRS. J. H. VENARDE (Dell Lanier), *Secretary*, 107 Mullin Road, Wilmington 3, Del. FIRST LIEUTENANT LABAN DENNIS SHAPIRO, *Assistant Secretary*, A03047883, Signal Ionosphere Station, A.P.O. 23, New York, N. Y.

1956

A note worthy of mention first this month is the recently announced tuition increase to \$1,300 effective fall, 1958. This is the second such move since our departure, and other increases have been made in commons and housing. Costs have been rising at an inflation rate, and I hope that the bold step of our rich neighbor will awaken the Alumni to the fact. A privately endowed institution cannot exist under that name if it is forced to request public funds for operation.

Among the recent mail was a welcome note from the mother of one of our classmates with an enclosed engagement announcement. Emilie Drew became engaged to Robert Lewis Cavanagh '57 of Milton in April. Since graduation Emilie has been with the Food Technology Department at Tech.

Avraham Berkovits wed Ella Ruben of Roxbury in September. Avraham is working for the National Advisory Committee for Aeronautics at Langley Field, Va. Robert Biehl became engaged to Winifred Jane Kine of Stamford, Conn., in February. Walter Conrad wed Constance Adair Miles of Trumbull, Conn., last November. Walter is with the Conrad Construction Company of Norfolk, Va. Russell Hobbie wed Cynthia Ann Borchering of Fredericksburg, Iowa, in January. Classmate James Bjorken was an usher. Russell is in graduate school at Harvard. Richard Jacobs wed Nancy Day Dean of Palmyra, N. Y., in February. David Mitchell wed Jean Herman of Kenmore, N. Y., in September, 1956. Bert Mullin wed Carolyn LaPadula while in Washington. Bert was in law school and working at the Patent Office before reporting to Pensacola. Ira Polevoy wed Rochelle Lekus of Hewlett, N. Y., last August. Ira is in his second year of medical school at New York Uni-

versity. Frank Sarno wed Carolyn Listaite of Worcester last December. Frank is a nuclear engineer for Combustion Engineering in Windsor, Conn.

The Robert Barenbergs became parents of a daughter, Joy Elizabeth, in August, 1957. Kendall and Candy Cady have a daughter, Julia. Kendall is in Course XIII graduate work at Tech.

James Davis is working on oxygen equipment for the X-15 at Wright-Patterson. Peter Dulchinos was with the General Electric Computer Division, then Sylvania, before he reported to the Signal Corps. Joseph Goodwill and James Hamblet are together in Army Ordnance in Korea. Ward Halverson was in the French Petroleum Institute in Paris in 1957. Edward Kirkpatrick is with New England Telephone and Telegraph in Boston. Charles Kusik received his S.M. in Nuclear Engineering at Tech in February and is presently studying for his Ph.D. William Layson is at the University of Sidney in Australia on a Fulbright but expects to return soon to work on his Ph.D. at Tech. Daniel Schurz is in grad school at Tech working on road planning with computers.

Looking back, the school life we led at Tech wasn't so bad. The officers in Communications School are normally taking quizzes at 6:00 A.M. and listening to lectures until noon, then heading for the drill field. This continues for 10 months with no nice vacations interspersed and is often followed by a nice tour of the defense perimeter.

Hope to be able to give some information of our sister groups, the local clubs, since I am now close enough to attend meetings.

Hope our representation at Alumni Day increased. Volunteers would be appreciated for regional co-ordination of the Class. — BRUCE B. BREDEHOFT, *Secretary*, 1528 Dial Court, Springfield, Ill. M. PHILIP BRYDEN, *Assistant Secretary*, 3684 McTavish Street, Montreal 2, P.Q., Canada.

1957

April in Cambridge has endowed the residents with a new automobile regulation. During the early morning, cars must be parked on even- or odd-numbered sides of the streets depending on the integral qualities of the month's divisibility by two. For example, in June autos are to be left on the even-numbered side of the street. Apparently, the city has the same outlook as Bob Rosenbaum, who has been continuing his studies of mathematics and his choral singing at the Institute this year. Since the car-to-parking-space ratio is already infinite, no noticeable effect can result from a diminution of spaces. (Nevertheless, Bob's recent third parking ticket may portend revision of this theory.) The municipal mandate has not been accepted with complete capitulation. A group of Harvard students has begun a survey of the city in the hope of unearthing a street with the single sided properties of a Moebius surface. However, the idea of a street with a fourth dimension entailing a pronounced proclivity for patrolmen was abandoned as a hazardous influence to the disappearance of non-mathematical residents.

From Fort Monmouth comes word of the completion of the Signal Officer Basic Course by two Electrical Engineering men, Allan Hiltunen and William Welch. The Navy is also the recipient of '57 talent. Alan Metzger recently became an ensign at the Officer Candidate School at Newport. Gerald Murphy is now working at Vibration Measurement Engineers in Evanston, Ill. Jack L'Hommedieu has remained at M.I.T. in the supersonic labora-

tory. John Crews writes from Stanford, where he is attending the Graduate School of Business, that he has been married to Janet Chambers, an alumna of Wellesley. Richard Smallwood, who will receive his Master of Electrical Engineering degree this June, has recently been awarded a scholarship by the Ramo-Wooldridge Corporation.

To the delight of many of us who have remained in the Cambridge area, Hank

Salzhauer (now studying at the Sloan Building) has been continuing his policy of monthly cocktail parties at his apartment in Brookline. We understand that one can stop up there any time, since the parties usually last from the first of the month through the 31st. — ALAN M. MAY, *Secretary*, 55 East End Avenue, New York 28, N. Y. MARTIN R. FORSBERG, *Assistant Secretary*, 8 Forest Street, Cambridge 40, Mass.

Alumni Day, June 16, 1958

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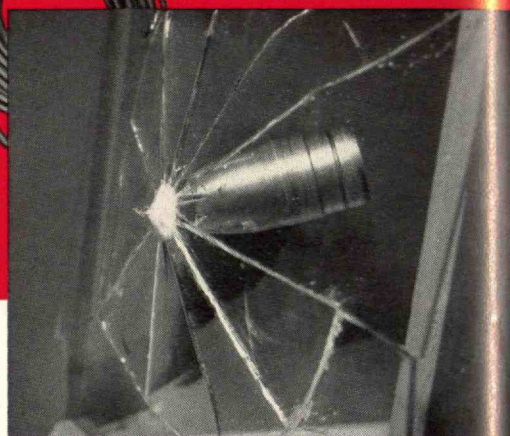
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Above: First photograph shows 20mm bullet just reaching scatter-proof glass. Focal point of concussion is readily seen along with maximum radius of fracture.

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Below: As bullet passes through, second photo indicates progressive shattering which is fairly well confined to point of contact.



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